Ţ

```
Result
                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                            Max1mum
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Perfect score:
                                                                                                                                                         ŏ
 110
110
1110
1110
1110
1110
1110
1110
                                                                                                                                                                                                 and is
                                                                                                                                                                                                        score greater than
                                                                                                                                                                                                                                                                                                                                                                                                                           DB DB
269
265.8
256.8
251.2
251.2
249.6
244.4
243.4
240.2
240.2
240.2
240.2
230.4
235.6
8
236.8
236.8
                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0
seq length: 2000000000
                                                                                                                                                                                                 derived
                                                                                                                                                                                               is the number of results predicted by chance to have a ater than or equal to the score of the result being printed, rived by analysis of the total score distribution.
                                                                                                                                                      Match Length DB
                                                                                                                                                               Query
                                                                                                                                                                                                                                    10:
11:
12:
13:
14:
15:
82.7
79.8
76.9
75.4
775.0
774.5
774.5
773.1
773.1
772.1
771.9
771.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-786-015-3
333
                                                                                                                                                                                                                                                                                                                                                                         EST:*
                                                                                                                                                                                                                                                                                                                                                                                         Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13736207 seqs, 6748477542 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                August 11, 2002, 21:30:32; Search time 2546.98 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 caggatgtgctgactcagcc.....ccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                           em_htc:*
gb_est1:*
                                                                                                                                                                                                                                        em_gss_hum:*
em_gss_inv:*
em_gss_pln:*
                                                                                                                                                                                                                                                                            gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                                                                             em_estro:*
                                                                                                                                                                                                                                                                                                                                                em_esthum:*
em_estin:*
                                                                                                                                                                                                                                                                                                                      em_estpl:*
                                                                                                                                                                                                                                                                                                                               em_estov:*
                                                                                                                                                                                                                                                                                                                                        em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                  em_estba:*
                                                                                                                                                                                                                                  em_gss_vrt:*
                                                                                                                                                                                                                                                                    gb_gss:*
Ü
BE476752
BE476398
BE485669
BE589073
BC5902510
BE5902510
BE5902510
BE5887574
BE487574
BE483566
BE722165
BE722165
BE722165
BE723166
BE723166
BE723166
BE723166
BE7483566
BE7483566
BE7483566
BE7483566
BE7483566
BE748368003
BE4888003
BE4888003
                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (without alignments)
1764.633 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                      27472414
        BE476752 160141
BE476398 159628
BE485669 172803
BE589073 194817
                                                                                                                                                      Description

    BA
    BA
```

4 4 4	43	42	41	40	39	38	37	36	35	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
217.6 216.2				•	•	•			•	•	•			•		•	w			•	٠				235.2	
65.3 64.9	5	5	5	5	6.	6	σ.	6.	7.	7.	8	8	8	8	9.	9.	69.7	0	0	0	0		0		70.6	0.
518 476	466	386	549	508	458	513	562	586	396	541	623	508	417	363	413	557	517	471	528	420	491	489	488	477	474	538
9 10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
AW462441 BG690901		BG692356		E4.8	E48439	BE483284	184865	BG688462	BE482524		BG692841	BE481939		F23105	885	BM088825	BE483056	BF774840		8264	BG692788	BE476453	BI849441	BG690381	BE588329	BG688590
AW462441 I BG690901	BE478405	в 692356	BG691624	BE481887	BE484396	BE483284	BI848653	BG688462	BE482524	BM087227	BG692841	BE481939	BG688700	BF231054	BE478852	BM088825	BE483056	BF774840	BG688615	BE482648	BG692788	BE476453	BI849441	BG690381	ω	BG688590
339802	162646	342021	340869	167492	170995	169398	471	ω	168348	499922	342685	167555	336418	253265		502373		28482			342607		47	338902	-	336269
9A BA		ВА					Š	ВА				ВА		ВА		×		ΜA	ВА	ВА	ΒA	ВА	₹	ВА	ВА	ВА

ALIGNMENTS

```
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
BE476752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                   Unpublished (2000)
Contact: Sonstegard TS
CONTACT: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                          FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 28 row: K column: 18
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BE476752
451 bp mRNA linear 160141 BARC 5BOV Bos taurus cDNA 5', mRNA sequence. BE476752
                                                                                                                                                                                                                                              PCR PRimers
                                                                                                                                                                                                                                                                     and -minmatch 12 options.
                                                                                                                                                                                                                                                                                    Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases call
v0.980904.e. Vector identified by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mapping of Expressed Sequence Tags from a normalized bovine mammary gland CNNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (bases 1 to 451)
Sonstegard, T.S., Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE476752.1 GI:9596285
                     /tissue_type="pooled"
/lab_host="DH10B"
                                                         /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/note="Vector:
                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Capuco, A.V.,
pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
                                                                                                                                                                                                                                                                                       called and alt_trimmed with phred by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                   Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
```

```
RESULT
BE476398
LOCUS
                                                                                                                                                                                                         JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                FEATURES
                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 297
                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                  AUTHORS
                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                  379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         glcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCGGCAGCGGGACCACGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCCCAGGATCGGCCCCCAGAACCCTCATCTATGGTGCGACCAGTCGAGCCTCGGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTGCTCTGGAAGCAGCAGCGACGTTGGAACTGGCAATTATGTGAGCTGGTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297;
                                                                                                                                                                                                                                                                                                                                            BE476398.1
EST.
                                                                                                                                                                                                                                                                                                                                                                  BE476398
159628 BA
BE476398
                                                       BACKWARD: GTTTTCCCAGTCACGACG
Plate: 27 row: G column: 1
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                        Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and
v0.980904.e. Vector identified by cross_m
                                                                                                                                                                                 USDA, ARS, Beltsville Agricultural Research Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
                                                                                                                                                                                                       Unpublished (2000)
Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                           Eukaryota;
                                                                                                                                                                                                                                                                                                                       Bos taurus
                                                                                         FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                and -minmatch 12 options.
                                                                                                                                                           Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                         Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                Sonstegard, T.S.,
                                                                                                    PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                          (bases 1 to 515)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                cDNA library
                                                                                                                                                                                                                                                                                                                                                                               BARC 5BOV Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1. .515
/db_xref="taxon:
/clone_lib="BARC
           /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                         GI:9595931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82.7%;
89.2%;
                                                                                                                                                                                                                                                                Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 275.4;
Pred. No. 1.9e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                         515
                                                                                                                                                                                                                                                                                                                                                                               CDNA
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                        Tags
                                                                                                                                                                                                                                                                Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                  411
                                                                                                                                                                                                                                                                                                                                                                            mRNA linear
5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.9e-62;
hes 36;
                                                                                                                          cross_match
                                                                                                                                                                                                                                                                Tassell, C.P.,
                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
                                                                                                                                                                                                                                         ฌ
                                                                                                                         alt_trimmed with phred
match with the -minscore
                                                                                                                                                                                                                                         normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                              Center
                                                                                                                                                                                                                                                                Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            451;
                                                                                                                                                                                                                                         bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                         -minscore
                                                                                                                                                                                                                                                                                                                                                                                        28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                           18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вþ
                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           암
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
             FEATURES
                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE485669
                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 293
                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 cccgaccgattctccggctccaggtctgggaacacaggccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 acctgctctggaagcagcagcaacattggaggtaatgcttatgtggggtggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 88.0 nes 293; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCGGCACAGGGACCACACTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGGCTGAGGACGAGGCTGATTATTTCTGTGCATCTTATGAAAAGCGGTAACACTGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCGACCGATTCTTCGGCTCCAGATCTGGGGAACACAGCCACCCTGACCATCAGCTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCCCAGGATCGGCCCCCAGAATTCTCATCTATGCTGCGACCAGTCGAGCCTCGGGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTGCTCTGGAAGCAGCAGCAACGTTGGAACTGGCAATTATGTGAGCTGCTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                    BE485669
172803 BARC 5BOV Bos tal
BE485669
BE485669.1 GI:9605202
EST.
                                                                                                                                                            Unpublished (2000)
Contact: Sonstegard TS
CONTACT: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bd1g. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                        BACKWARD: GTTTTCCCAGTCACGACG Plate: 132 row: F column: 18 Seg primer: ATTTAGGTGACACTATAG
                                                                                                 and -minmatch 12
                                                                                                               Single pass sequencing. Bases v0.980904.e. Vector identified
                                                                                                                                                                                                                                                    Mapping of Expressed Sequence gland cDNA library
                                                                                                                                                                                                                                                                                               Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                           COW
                                                                     FORWARD: AGGAAACAGCTATGACCAT
                                                                                      PCR PRimers
                                                                                                                                              Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                   Wells,K.D.
                                                                                                                                                                                                                                                                                                                                            Mammalia;
                                                                                                                                                                                                                                                                                                                                                          Eukaryota;
                                                                                                                                                                                                                                                                                                                  (bases 1 to 495)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: Library made from pooled mRNA isolated from mammar tissues at eight physiological, developmental, and states."

a 178 c 132 g 107 t
             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                           ; Metazoa; Chordata; Craniata; Vertebrata; Eute
Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 495 bp mRNA 5BOV Bos taurus cDNA 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80.8%;
                                                                                                    options.
                                                                                                                                                                                                                                                                                               Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 269; DB 10;
Pred. No. 9.7e-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                 called and alt_trimmed with phred by cross_match with the -minscore
                                                                                                                                                                                                                                                                    Tags
                                                                                                                                                                                                                                                                                                 Van
                                                                                                                                                                                                                                                                                               Tassell, C.P.,
                                                                                                                                                                                                                                                                    from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40;
                                                                                                                                                                                                                                                                    þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  developmental, and
                                                                                                                                                                                                                                                                    normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                 Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              515;
                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                    bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                            Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              XhoI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
RESULT
BE589073
LOCUS
                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 291
                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGCTGAGGACGAGGCAGATTATTTCTGTGCATCTTGGCAAATTGGTAACAATGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCCCAGGATCGGCCCCCAGAACCCTCATCTATGCTGCGACCAGTCGAGCCTCCGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCTGCTCTGGAAGCAGCAAGAACGTTGGAACTGGCAATTTTGTGAGCTGGGTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                        Unpublished (2000)
Contact: Sonstegard TS
Contact, Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bd1g 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                       Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with
v0.980904.e. Vector identified by cross_match with the -mi
                                                                                                                                                                                                                                                                                                                                                                                               BE589073
194817 BARC 5BOV BOS
BE589073
BE589073.1 GI:984211
                                                                                                                                                                                                                                                                                    Bovidae; Bovinae; Bos. 1 (bases 1 to 564)
                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                  Bos taurus
                                          PCR PRimers
                                                           and -minmatch 12 options.
                                                                                                                                                                                                                                     Mapping of Expressed
                                                                                                                                                                                                                                                                   Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 79.8%;
Similarity 87.4%;
91; Conservative
                             FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95
                                                                                                                                                                                                                      cDNA library
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tlssue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

a 174 c 131 g 95 t
              GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                  GI:9842112
Z
column:
                                                                                                                                                                                                                                     Sequence Tags from a
                                                                                                                                                                                                                                                                                                                                                                                                                              taurus cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 265.8; DB 1
Pred. No. 6.7e-60;
0; Mismatches 42
                                                                                                                                                                                                                                                                                                                                                                                                                                             564
                                                                                                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA linear
5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            42;
                                                                                                                                                                                                                                    normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           495;
                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                                                     bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                            -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                             28-AUG-2000
                                                                                                                                                                                                                                                                                                                 Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                         phred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         disease
                                                                            18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

δ

δÃ 밁

밁

Š

밁

Ş 밁 S 밁 ð

밁

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                       RESULT
BG691510
                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                            Locus
                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                              400
                                                                                                                                                                                                                                                                                                                                                                                                          301 ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 acctgctctggaagcagcaacattggaggtaatgcttatgtggggtggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9tcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                           TTCGGCGGCGGGACTACATTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCTGAAGACGAGGCAGATTATTTCTGTGCATCTTATCAGGGTGGTAGGACAGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCCCAGGATCGGCCCCCAGAACCCTCATCTACGGTGCCACCAGTCGACCCACGGGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCTGCTCTGGAAGCAGCAGCAACATTGGAACTGGCAATTATGTGAGTTGGTTCCAACAG
                                                                                                                                                                                                                                                                    BG691510
340705 BARC
BG691510
BG691510.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      285;
                                                 Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
           Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases v0.980904.e. Vector identified
                                                                                                                                             Wells, K.D.
Mapping of Expressed
                                                                                                                                                                                                                                                        COW.
                                                                                                                                                                        Sonstegard, T.S.,
                                                                                                                                                                                     Bovidae; Bovinae; Bos.
1 (bases 1 to 655)
                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                            Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
-minmatch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                 cDNA library
                                                                                                                                                                                                                                                                                                            BARC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."

a 191 c 155 g 112 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                   GI:13933330
                                                                                                                                                                                                                                                                                                              5BOV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76.9%;
85.6%;
                                                                                                                                                                                                                                                                                                           655 bp
Bos taurus cDNA
options
                                                                                                                                                                       Capuco, A.V.,
                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. 2.4e-57;
           Bases called and alt_trimmed with phred ntified by cross_match with the -minscor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                             Tags
                                                                                                                                                                          Van
                                                                                                                                                                                                                                                                                                            mRNA
A 5', mRt
                                                                                                                                                                        Tassell, C.P., Ashwell, M.S.
                                                                                                                                                from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 10;
                                                                                                                                                                                                                                                                                                              mRNA sequence
                                                                                                                                                D
                                                                                                                                               normalized
                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                          EST 02-MAY-2001
                                                                                                                                                bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
              -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                  Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                  399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                159
                                                                                                                                                                          and
              18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                             RESULT
BE590205
                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                 COMMENT
                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local 9
                                                                                               JOURNAL
                                                                                                                        TITLE
                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                      328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                148
                                                                                                                                                                                                                                                                                                                                                                  388
                                                                                                                                                                                                                                                                                                                                                                                            298
                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 caggatgtgctgactcagccgtcctccgtgtctggggtccctggggccagaggggtctcccatc
                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gttttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                 caggctgaggacgaggccgattattactgtgcatcgtatca---aagtacttacagtggt
                                                                                                                                                                                                                                                                                                                                                                TTTTTCGGCAGCGGGACCACACTGACCGTCCTGGGT 423
                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGCCGAGGACGAGGCGGATTATTTCTGTGCATCTCCTGACACTAGTAGCAAGAGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTGCTCTGGAAGCAGCAATGTTGGAAGTGGCAATTATGTGAGCTGGTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGCTGTGCTGACTCAGCCGTCCCGTGTCCCGGGTCCCTGGGCCCAGAGGGTCTCCATC 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       290;
                        Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                         Mapping of Expressed gland cDNA library
                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                        BE590205
197215 BARC 5BOV Bos taurus c
BE590205
BE590205.1 GI:9843244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 99 row: I column: 6
                                                                                                                                                                                                                 Bos taurus
                                                                                                                                                Sonstegard, T.S.,
                                                                                                                                                            (bases 1 to 467)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              te: 99 row: I column: 6
primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
 tads@lpsi.barc.usda.gov
pass sequencing. Bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    states."
a 221 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: X
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75.4%;
86.3%;
                                                                                                                                               Capuco, A.V.,
                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 251.2;
Pred. No. 5.2e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                 7 bp
cDNA
                                                                                                                    Tags
                                                                                                                                                Van
  called
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124
                                                                                                                                                                                                                                                                                 mRNA linear
5', mRNA sequence.
                                                                                                                                                Tassell,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .2e-56;
                                                                                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       43;
                                                                                                                      a
alt_trimmed
                                                                                                                                             ,C.P.,
                                                                                                                       normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                 Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               655;
                                                                                                                                                                                                                                                                                               EST
 with
                                                                                                                      bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω,.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and disease
                                                                                                                                                                                                                                                                                               28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                    387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XhoI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
```

```
LOCUS
DEFINITION
ACCESSION
                                        JOURNAL
COMMENT
                                                                                                                                                                                         KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                      RESULT
BE487574
                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                     DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                       REFERENCE
                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                            ORGANISM
                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                             374
                                                                                                                                                                                                                                                                                                                                                                                 314
                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                      254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134
                                                                                                                                                                                                                                                                                                                                                      298
                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Sinhes 289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gttttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                                           caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttac---agtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                 9tcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                             AGATTCGGCAGCGGGACCACACTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                               CAGGCCGAGGACGAGGCAGATTATTTCTGTGCATCTCCTGACAGTAGTAACAGGAGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCCCAGGATCGGCCCCCAGACTGCTCATCTATAGTGCGACCACTCGAGCCTCTGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTGCTCTGGCAGCAGCGGCAATATTGGGAAATGGCAATTATGTGACCTGGTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and -minmatch 12 options.

PCR PRIMER'S
FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCAGGACG
Plate: 117 row: M column: 12
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                             BE487574
176397 BI
BE487574
Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
                                                                 Mapping of Expressed gland cDNA library
                                                                                                         1 (bases 1 to 493)
Sonstegard, T.S., Capuco, A.V.,
                                                                                                                                  Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Cetartiod Bovidae; Bovinae; Bos.
                                                                                                                                                                            Bos taurus
                                                                                                                                                                                                     BE487574.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   h 75.0%;
Similarity 86.0%;
89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              v0.980904.e. Vector identified
                                                                                              Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83
                                                                                                                                                                                                                                             BARC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

a 161 c 126 g 97 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                          5BOV Bos taurus cDNA 5', mRNA sequence
                                                                                                                                                                                                                    GI:9607107
                                                                                                                                               Chordata; Craniata; Vertebrata; Cetartiodactyla; Ruminantia; Pe
                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 249.6; DB 10;
Pred. No. 1.2e-55;
0; Mismatches 44;
                                                                                                                                                                                                                                                           493
                                                                                                                                                                                                                                                         dq
                                                                              Tags
                                                                                                         Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bу
                                                                                                         Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cross_match with
                                                                                                                                                                                                                                                         mRNA
                                                                                from
                                                                                                                                                                                                                                                                                                                                                     333
                                                                                ۵
                                                                                normalized
                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                         Ashwell, M.S.
                                                                                                                                                Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                           EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
,.
                                                                                bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -minscore
                                                                                                                                                                                                                                                         28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                  Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                          297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                               373
                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
```

ŧ.

```
RESULT
BG688999
LOCUS
                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                    SOURCE
                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
  COMMENT
                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                  EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 287
                                                                                                                                      ORGANISM
               JOURNAL
                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                             386
                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                         269
                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caggatgtgctgactcagccgtcctccgtgtctgggtccctgggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                 cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                             TTCGGCAGCGGGACCACACTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                  CAGGCTGAGGACGAGGCAGATTATTTCTGTGCATCTTATCAGAGTGGT---AATGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                        ACCTGCTCTGGAAGCAACATCAACGTCGGAACTGGCAATTATGTTGGCTGGTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74.5%;
al Similarity 86.2%;
287; Conservation
                                                                                                                                                               BG688999
336848 BARC
BG688999
BG688999.1
                                                                                            Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartlodactyla; Ruminantia; Pecora; Bovoidea;
gland cDNA library
Unpublished (2000)
Contact: Sonstegar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and -minmatch 12 options.
PCR PRimers
PCRWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases c
v0.980904.e. Vector identified
                           Mapping of Expressed Sequence gland cDNA library
                                                                   Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plate: 138 row: L column: 11 Seq primer: ATTTAGGTGACACTATAG.
                                                                                  (bases 1 to 467)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."

a 173 c 127 g 98 t
Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                           5BOV
                                                                                                                                                                                  GI:13930800
                                                                                                                                                                                                            Bos taurus
                                                                   Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 248.2; DB 1
Pred. No. 2.9e-55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                           cDNA 5', mRI
                                         Tags
                                                                   Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              called and alt_trimmed with phred by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                       333
                                         from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43;
                                                                                                                                                                                                           mRNA
                                         ρ
                                                                                                                                                                                                           sequence
                                         normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 493;
                                                                   Ashwell, M.S.
                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
                                         bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                  385
                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    208
                                                                                                                                                                                                                                                                                                                                                                                                        328
                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                             268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18
```

Š

망 Qy В δ 밁 ş В Q 망

밁 Ş

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                     RESULT
BE476758
                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                         LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                           REFERENCE
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                              VERSION
                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
  TITLE
                               AUTHORS
                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 284;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                              385
                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                     325
                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                              265
                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                       205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 caggatgtgctgactcagccgtcctccgtgtctggggtccctggggccagaggggtctccatc
                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                           acctgctctggaagcagcaacattggaggtaatgcttatgtggggctggtaccaacag 120
                                                                                                                                                                                                                                                              TTCGGCAGCGGGACCACACTGACCGTCCTGGGT 417
                                                                                                                                                                                                                                                                           ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                   caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCGGCCTCCCTGGGCCAGAGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                     CAGGCTGAGGACGAGGCGGATTATTTCTGTGCAGCTGATGACAGCAGCAGCAGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCCCAGGATCGGGCCTCAGAACCATCATCTATGGTAGTAGCAGTCGACCCTCGGGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTGCTCTGGAAGTAGCAGCAATATCGGTAGTTATG---GTGTGGGCTGGTACCAACAG
                                                                                                              BE476758 496
160150 BARC 5BOV Bos taurus c
BE476758
BE476758.1 GI:9596291
EST.
COW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
Sonstegard, T.S., Capu
Wells, K.D.
Mapping of Expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and -minmate
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases v
0.980904.e. Vector identified
                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                    Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq
                                           Bovidae; Bovinae; B
1 (bases 1 to 496)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plate: 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     te: 103 row: H column: 3
primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -minmatch 12 options
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

a 161 c 128 g 93 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73.1%;
85.3%;
                             Capuco, A.V.,
                                                        Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 243.4; DB 1
Pred. No. 5.2e-54;
0; Mismatches 46
                                                                                                                                                                                      496
                                                                                                                                                                         6 bp
cDNA
Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        called and alt_trimmed with phred d by cross_match with the -minscor
                             Van Tassell, C.P.,
                                                                                                                                                                       mRNA
5', mRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46;
                                                                                                                                                                          sequence.
  normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                             Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         467;
                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -minscore
                                                                                                                                                                                        28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                             324
                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                     264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18
```

Sequence

from

Ø

bovine mammary

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                     DEFINITION ACCESSION
                                                                                                                                            RESULT 1
BG689524
                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL COMMENT
                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
  REFERENCE
                                                                                                                               LOCUS
                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                               386
                                                                                                                                                                                                                                                326
                                                                                                                                                                                                                                                                                                   266
                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                    206
                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                       149
                                                                                                                                                                                                                        298
                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                           68
                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                     caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacag---tggt
                                                                                                                                                                                                                                                                                                                                                                 gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                  acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                                                                                                                                                                                                             ATCCCAGGATCGGCCCCCAGAACCCTCATCTATGGTGACACCAGTCGAGCCTCGGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                      ACCTGCTCTGGAAGCAGCAGCAATGTTGGA---AATGGATATGTGAGCTGGTACCAACTG
                                                                                                                                                                                                                                               CAGGCTGAGGACGAGGCAGATTATTTCTGTGCATCTGCTGAGGATAGTAGCAGTAATGCT
                                                                                                                                                                                                                                                                                                  BG689524
337633 BARC 5BOV Bos
BG689524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gland cDNA library
Unpublished (2000)
Contact: Sonstegard TS
COSDA, ARS, Beltsville Agricultural Research Center
USDA, ARS, Beltsville, MD 20705, USA
Tel: 301 504 8414
Fax: 301 504 8414
                                                                             EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with
v0.980904.e. Vector identified by cross_match with the -mi
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Bos.
1 (bases 1 to 484)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BACKWARD: GTTTTCCCAGTCACGACG
Plate: 28 row: L column: 3
Seq primer: ATTTAGGTGACACTATAG
                                                   Bos taurus
                                                                                         BG689524.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and -minmatch 12 options
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73.0%; ilarity 86.9%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ש
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note-"Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 496
                                                                                       GI:13931325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167 c
                                                                                                                484
taurus (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 243.2; DB
Pred. No. 6e~54;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    133 g
                                                                                                                4 bp
cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98
                                                                                                                mRNA
5', mRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10;
                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38;
                                                                                                                 sequence
                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    496;
                                                                                                                               EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -minscore
                                                                                                                               02-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   phred
                                                                                                                                                                                                                                                                       297
                                                                                                                                                                                                                                                                                                                                                    265
                                                                                                                                                                                                                                                                                                                                                                                                      205
                                                                                                                                                                                                                                                                                                 325
                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
```

12.2

```
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                RESULT 1
BE483566
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                           DЪ
                                                                                                                                                                           밁
                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                    ΩV
                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 275;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                      301
                                                                                                                                                                                                                                   333
                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                            153
                                                                                                                                                                           393
                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                            273
                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagaggggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                          acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                                                                                           ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                  | Caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                           CCCGACCGATTCTCCGGCTCCAGGTCTGGGAACAGCCACCCTGACCATCAGTGCGCTC
                                                                                                                                                                                                                                                                                                                                                                gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGGCTGTACTGACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAGGGTCTCCATC
                                                                                                                                                                         TTCGGCGGCGGGACCACACTAAGCGTGCTGGGT 425
                                                                                                                                                                                                                                   CAGGCCGAGGACGAGGCGGATTATTTTTGTTCATCTCCTGATAGTAGTAGCGGTGGTATT
                                                                                                                                                                                                                                                                                                       cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                   ATCCCAGGATCGGCCCCCAAAATGGTCATCTATGGTGCGACCAGACGACCCTCTGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                           ACCTGCTCTGGAAGCAGCGACAATGTTGGAACTGTGAGTTGGTTTCCAACAG
                                     BE483566
169766 BARC:
BE483566
BE483566.1 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Single pass sequencing. Bases ov 0.980904.e. Vector identified and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2000)
Contact: Sonstegard TS
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bd1g. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                            COW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases
             Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: AGGAAACAGCTATGACCAT BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sonstegard, T.S., Capuco, A.V., Wells, K.D.
Bos taurus
Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plate: 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       te: 102 row: K column: 2
primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

a 161 c 136 g 101 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              l. .484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
 Metazoa;
                                                         GI:9603099
                                                                                    5BOV Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        72.1%;
 Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 240.2; DB 10; Pred. No. 3.7e-53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                   518
                                                                                   8 bp mRNA
cDNA 5', mRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           called
Craniata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           led and alt_trimmed with cross_match with the -mi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                   mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58;
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       484;
Euteleostomi;
                                                                                                  EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -minscore
                                                                                                   28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           phred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    152
                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                   272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                         332
                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                           212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18
```

```
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                      RESULT 1
BE751028
LOCUS
                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                              δ
                                                                                                                                                                              В
                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 290; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                            389
                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                  152
                                                                                                                                                      298
                                                                                                                                                                                                                                         269
                                                                                                                                                                                                                                                                                             209
                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                         92
                                                                                   12
                                                                                                                                                                                                                                                                                                                                                                                                                      1 caggatgtgctgactcagccgtcctccgtgtctgggtcccttgggccagagggtctcccatc
                                                                                                                          gtcccaggatcagccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                 ACCTGCACCGGAAGCAGCAGCAATGTTGGA---AATGGATATGTGAGCTGGTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                 acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                      CAGGCTGTGCTGACTCAGCCATCATCCGTGTCCGGGTCCCTGGGCCAGAGGGTCTCCATC 151
                                                                                                                                                                                 CAGGCTGAGGACGAGGCAGATTATTTCTGTGCAGCTGGTGACAGCAGTAGCAGTAATGCT
                                                                                                                                                                                              caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacag---tggt
                                                                                                                                                                                                                                                                                             ATCCCAGGATCGGCCCCCAGAACCCTCATCTATGGTGACACCAGTCGAGCCTCGGGGGGTC
                                                                                                                                                                                                                                      BE751028
202731 MARC 2
BE751028
BE751028.1 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bdlg
Tel:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and -minmatch 12 options.
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Sonstegard TS USDA, ARS, Beltsville /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 518)
Sonstegard, T.S., Capuco, A.V., Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plate: 23 row: L column: 14
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovidae; Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mammalia; Eutheria; Cetartiodactyla; Ruminantia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , ARS, Beltsville Agricultural Research Center
200 Rm 2A, Beltsville, MD 20705, USA
301 504 8416
301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ing of Expressed Sequence Tags from a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_11b="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."

a 177 c 141 g 99 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                         2BOV Bos taurus cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72.1%;
86.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 240; DB 10;
Pred. No. 4.3e-53;
0; Mismatches 40;
                                                        542
                                      5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tassell, C.P.,
                                                     mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 518;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ashwell, M.S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovoidea;
                                                                                                                                                                                                                                      328
                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                             268
                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                 208
                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                   Š
                                                                                밁
                                                                                                          δõ
                                                                                                                                    В
                                                                                                                                                              Qy
                                                                                                                                                                                            g
                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                οy
                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
```

```
JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
389
                                                                                                                                             269
                                                                                                                                                                                  181
                                                                                                                                                                                                                       209
                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                       92
                                                                                                                                                                                                                                                                                                                                                                   tttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                       caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagt-ggtgt
                                                                                                                                                                 CAGGCTGAGGATGAGGCCGATTATTTCTGTGTAGCTATGACAGTAGTAGCAGTANTTGT
                                                                                                                                                                                                                       GTCCCAGGATCGGGCCTCATAACCATCATCTATGGTAGTAGCAGTCGACCCTCGGGGGTC
                                                                                                                                             Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T., Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett, G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G. Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
Single pass vector identified by cross_match with the -minscor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence evaluation of four pooled-tissue normalized bovine libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, US Tel: 402 762 4366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BACKWARD: GTTTTCCCAGTCACGACG
Plate: 42 row: B column: 15
Seg primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tel: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 542)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled tissue from testis, thymus, semitendonosus muscle, longissimus muscle, pancreas, adrenal, and endometrium."

183 c 144 g 112 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC 2BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                               71.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 239.4; DB 1
Pred. No. 6.3e-53;
0; Mismatches 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 542;
                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                240
                                                                                                          299
                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                             208
                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                       268
                                                                                                                                             328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
```

```
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 13
BE722165
LOCUS
                                                                                     δÃ
                                                                                                                                                         Ωy
                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                                                                                                                                                                                                                     BASE CO
                           δõ
                                                               В
                                                                                                                              망
                                                                                                                                                                                            В
                                                                                                                                                                                                                                                        В
    日
                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                    COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
    329
                                241
                                                                 269
                                                                                              181
                                                                                                                               209
                                                                                                                                                             121
                                                                                                                                                                                            149
                                                                                                                                                                                                                           19
                                                                                                                                                                                                                                                            89
                                                                                                                                                                                                                                                                       1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagaggggtctccatc
                                                                                                                                           gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                        CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCCGGGTCCCTGGGCCAGAGGGTCTCCATC
                                                                                                                          ATCCCAGGATCGGCCCCCAGAACCCTCATCTATGGTGACACCAGTCGAGCCTCGGGGGTC
                                                                                                                                                                                        ACGTGCTCTGGAAGCAGCAACGTTGGATATGGCAATTATGTGAGCTGGTTCCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BE722165
190280 MARC
BE722165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 557)
Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T.,
Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett
,G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G.
Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: 402 762 4366
Fax: 402 762 4390
Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Single pass sequencing. Bases of v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE722165.1
                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plate: 102 row: L column: 3 Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21180013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Keele,J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                    115
                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC 4BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                               /"UULE="Vector: pCMV SPORT6; Site_1: XbaI; Library made from pooled tissue from day 2 embryos."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            557 bp mRNA linear 4BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:10123461
                                                                                                                                                                                                                                                                                                                                    71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                    ဂ
                                                                                                                                                                                                                                                                                                                     Score 237.6; DB 10; Pred. No. 1.9e-52; 0; Mismatches 34;
                                                                                                                                                                                                                                                                                                                                                                                                                    142
                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                called and alt_trimmed with phred by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                20 and
                                                                                                                                                                                                                                                                                                                                                      557;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST
                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                            2: XhoI;
day 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-APR-2001
                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                           240
                                                                                                                            268
                                                                                                                                                           180
                                                                                                                                                                                          208
                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                        148
                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18
                                                                                                                                                                                                                                                                                                                       0;
```

A True

```
BASE COUNT
ORIGIN
                                                                                                                                                                  밁
                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
BE485929
                                                  В
                                                                            QУ
                                                                                                         밁
                                                                                                                                  QY
                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                 ρ
밁
                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
 326
                                                     266
                                                                                 181
                                                                                                            206
                                                                                                                                        121
                                                                                                                                                                   149
                           241
                                                                                                                                                                                             61
                                                                                                                                                                                                                          89
                                                                                                                                                                                                                                                                                 Local Sines 288;
                                                  gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                       CAGGCTGAGGACGAGGCGGATTATTTCTGTGTAGCTATTGACAGTAGTAGCAGTATTGCT
                                                                                                           GTCCCAGGATCGGGCCTCAGAACCATCATCTATGGTAGTAGCAGTCGACCCTCGGGGGTC
                                                                                                                                                                  ACCTGCTCTGGAAGCAGCGGCAACATCGGTCGTTA---TAATGTGGGCTGGTACCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST.
COW.
Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BE485929
173232 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plate: 131 row: H column: 15
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases
v0.980904.e. Vector identified
and minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (2000)
Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mapping of Expressed Sequence Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bovidae; Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE485929
BE485929.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 503)
                                                                                                                                                                                                                                                                                Similarity 85.7
88; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 504 8416
301 504 8414
                                                                                                                                                                                                                                                                                                                                                                 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BARC
                                                                                                                                                                                                                                                                                                                                                                 þ
                                                                                                                                                                                                                                                                                                                                                            /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BoV"
/tissue_type="pooled"
/lab_host="PH10B"
/note="Vector: pcMV SPORT6; Site_1: XbaI; Site_2: XhoI;
/ibrary made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disease
states."
a 175 c 134 g 102 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:9605462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                           71.1%;
85.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bos.
                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                              Score 236.8; DB Pred. No. 3e-52; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               called and alt_trimmed with phred by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                          DB 10;
                                                                                                                                                                                                                                                                                42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       normalized
                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                           503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-AUG-2000
                                                                                                                                                                                                                                                                                Gaps
                                                                               240
                                                                                                                                     180
                                                                                                                                                                                             120
                                                                                                                                                                                                                         148
                                                     325
                                                                                                            265
                                                                                                                                                                  205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                2
```

ş

ţ

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
BE483616
LOCUS
 Š
                                    밁
                                                               δÃ
                                                                                                       В
                                                                                                                                  Qy
                                                                                                                                                                         밁
                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 288; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                            121
                                                                                                                                                                            153
                                                                      181
241 caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtg--
                                                                                                         210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           298 gttttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                   93
                                                    cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                           gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                              acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                                                                          ACCTGCTCTGGAAGCAGCAACATCGGTAGATATG---GTGTGGGCTGGTACCAACAG
                                                                                                                                                                                                                                                CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCCGGGTCCCTGGGCCAGAGGGTCTCCATC 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTTTCGGCAGCGGGACCACACTGACCGTCCTGGGT 421
                                                                                                         GTCCCAGGATCGGGCCTCAGAATCATCATCTATGGTAGTAGCAGTCGACCCTCGGGGGTC
                                                                                                                                                                                                                                                                     caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc 60
                                    Bos taurus Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 23 row: 0 column: 8
Seq primer: ATTTAGGTGACACTATAG.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
and -minmatch 12 options.
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USDA, ARS, Beltsville Agricultural Research Center Bdlg. 200 km 2A, Beltsville, MD 20705, USA Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2000)
Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mapping of Expressed Sequence Tags from a normalized bovine mammary gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE483616 514 bp mRNA linear
169832 BARC 5BOV Bos taurus cDNA 5', mRNA sequence.
BE483616.1 GI:9603149
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                            97
                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                            D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lb="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."
                                                                                                                                                                                                                                                                                                                                 71.18; 85.78;
                                                                                                                                                                                                                                                                                                                                                                                                                          178 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                 Score 236.8; DB 10;
Pred. No. 3e-52;
0; Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                       139 g
                                                                                                                                                                                                                                                                                                                                                                                                                          100 t
                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                    Length 514;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                 Gaps
   298
                                                                     240
                                                                                                         269
                                                                                                                                        180
                                    329
                                                                                                                                                                          209
                                                                                                                                                                                                                                                                                                                     2;
```

```
Ωy
    밁
330
```

Search completed: August 11, 2002, 21:30:34 Job time: 6285 sec

밁

THIS PAGE BLANK (USPTO)

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         on:
                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                        206.2
198.4
197
195.4
193.6
193.2
                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N_Geneseq_032802:*
1: /SIDS1/gcgdata/g
2: /SIDS1/gcgdata/g
3: /SIDS1/gcgdata/g
4: /SIDS1/gcgdata/g
5: /SIDS1/gcgdata/g
6: /SIDS1/gcgdata/g
7: /SIDS1/gcgdata/g
8: /SIDS1/gcgdata/g
    100.0
61.9
59.6
59.2
58.7
58.1
58.0
58.0
                                                                                                                                                                                                              Match
                                                                                                                                                                                                                                    Query
                                                                                                                                                                                                                                                                                                                                                                                                         10:
111:
12:
13:
14:
15:
16:
17:
17:
18:
18:
19:
20:
21:
22:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1988.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1989.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1991.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1991.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1991.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1993.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1995.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1995.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1995.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1996.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*

//SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1736436 seqs, 858457221 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-786-015-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     August 11, 2002, 22:10:19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caggatgtgctgactcagcc.....ccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1980.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1981.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1983.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1983.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1986.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1987.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1984.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1985.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                    \SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000, DAT: *
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A. DAT: *
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B. DAT: *
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2002. DAT: *
                                                                                                                                                                                                              Length
    333
331
339
339
348
348
915
                                                                                                                                                                                                                DΒ
                                                                                                                                                                                                                ij
AAA08401
AAI68771
AAC66525
AAH47733
AAI58663
AAZ55614
AAH74666
AAH74670
AAH74679
                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Search time 376.54 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (without alignments)
1518.385 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3472872
               Carcinoembryonic a Human autoantibody Human immune syste Nucleotide sequenc Human polynucleoti Internalising anti Nucleotide sequenc Nucleotide sequenc
                                                                                                                                                                                                            Description
```

O

5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
8	182	æ	82.	•	82.	8	184	184	184	84	185.6	85.	85.	85.	85.	85.	86.	87.	87.	87.	87.	87.	87.	187.4	88	189	<u> </u>	58	98	28	90	92	192.2	192.2	193
54.7							Ģ	ŗ	ŗ	Ğ	Ġ	ŗ	Ģ	ÿ	Ģ	Ċ	ō	6	9	Ġ	σ.	ō	Ġ	6	Ġ	ō	9	Ġ	'n	Ġ	7.	7.		57.7	
732	732	330	330	342	334	333	884	342	336	333	774	393	866	756	333	333	351	933	393	9071	9071	889	747	390	330	482	330	351	333	333	464	1044	891	628	w
20	20	22	11	24	22	20	11	24	21	20	18	18	23	23	20	17	22	20	18	13	13	23	21	19	22	21	21	22	22	22	22	12	22	14	22
AAX86941	AAX86940	AAH68677	w	ABA94244	\vdash	22	AAQ03609	2	AAC96953	AAZ31654	AAT50787	726	AAS87037	AAS83477	AAZ31655	AAT10327	AAI68755	AAV72534	AAT80759	AAQ23370	AAQ22491	AAS77073	AAC67868	AAV33307	AAS03477	AAC98409	AAA27661	87	AAH42407	N	23	128	6652	Q3613	AAS03520
Antibody BIOA8 com	віол8 е	~	e	sHigM22 light chai	Anti-IL-18 antibod	Human anti-GPIIb/I	Sequence encoding	sHigM22 light chai	Human anti-HBs ant	Coding sequence fo	huma	HSV 863 antibody 1		DNA encoding novel	Coding sequence fo		Human autoantibody	gle	64-863 antibody HS	U266-Lambda gene a	2	DNA encoding novel	Recombinant human	Anti-human CD23 6G	encoding	Human colon cancer	DNA encoding anti-	Human autoantibody		Nucleotide sequenc	C	ble reg	8	H7 MAD light	DNA encoding anti-

ALIGNMENTS

RESULT AAA08401 Carcinoembryonic antigen; CEA; sheep; monoclonal antibody; tumour associated antigen; anti-carcinogenic; cytostatic; cancer therapy; ds. 09-MAR-2000 Ovis sp. Carcinoembryonic antigen affinity antibody light chain variable region. 13-JUL-2000 AAA08401; AAA08401 standard; DNA; 333 BP WO200012556-A1 (KSBI-) KS BIOMEDIX LTD. 28-AUG-1998; 20-AUG-1999; P. (first entry) 98GB-0018915 99WO-GB02729

A new high-affinity monoclonal antibody that is characterized by an

P-PSDB; AAY82529 WPI; 2000-375618/32. Harrison

```
RESULT
AA168771
ID AA16
XX AA16
XX AA16
XX AA16
XX AA16
DT 22-J
XX Huma
XX Plut
KW Polly
KW Yari
XX Yari
XX Polly
KW Polly
KW Polly
KW Poll
XX Yari
XX Yari
XX Yari
XX 10---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention describes a high-affinity monoclonal antibody characterised by an acid-washed enzyme-linked immunosorbent assay (EIA). The antibody is used in cancer therapy. Association of the new antibody with an antigen is favoured over dissociation in vivo and they therefore have longer localisation times at target sites, resulting in a higher concentration of antibodies localised at the target sites. Targeting the antibody to a site in vivo is improved. The concentration of antibody does not need to be too high which reduces side-effects and costs of therapy. The present sequence encodes the light chain variable region of a monoclonal antibody having affinity for carcinoembryonic antigen (CEA, a tumour associated antigen), which is used in the exemplification
 10-APR-2000;
                               29-MAR-2001;
                                                                                           EP1149914-A2
                                                                                                                                                                                       Autoantigen; fusion protein; islet cell antigen; MICA autoantibody; glutamate decarboxylase; diabetes mellitus type I; stiff-man syndro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 333 BP; 66 A; 103 C;
                                                              31-OCT-2001
                                                                                                                            Homo sapiens
                                                                                                                                                        polyglandular autoimmune syndrome; autoimmune
variable region; heavy chain; MICA-10; ds.
                                                                                                                                                                                                                                        Human
                                                                                                                                                                                                                                                                       22-JAN-2002
                                                                                                                                                                                                                                                                                                                                   AAI68771 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acid-washed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the present invention.
                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caggatgtgctgactcagccgtcctccgtgtctgggtccctgggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                               ttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                                                                            ttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9tcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        autoantibody MICA-10 variable region heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      enzyme-linked immunosorbent assay for use in cancer therapy
   2000DE-1017782
                               2001EP-0107702
                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                   331
                                                                                                                                                                                                                                                                                                                                   ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 333; DB 21;
Pred. No. 2.9e-86;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70
                                                                                                                                                                                                                                                                                                                                                                                                                                              333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                      DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                        gandrome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

```
RESULT
AAC66525
XEXEXEX
                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention describes a novel fusion protein (I) that has, at its CN-terminus, one or more epitopes that bind specifically to autoantibodies (AAb) against the islet cell antigen IA2 and, at its C-terminus, one or comore epitopes that bind specifically to antibodies (Ab) directed against the glutamate decarboxylase GAD65. (I), also nucleic acid (II) encoding (II) vectors containing (II) and transformed cells, are useful for CC diagnosis and prognosis of diabetes mellitus type I, stiff man syndrome, copylandular autoimmune syndrome or other autoimmune conditions associated with Aab against GAD65 or IA2. (I) provides a rapid and simple CC diagnosis of high specificity and sensitivity, capable of recognizing antibodies against both IA2 and GAD65, simultaneously. Unlike known CC fusions, where the GAD65 component is at the N-terminus, (I) contains CC correctly folded conformational epitopes that can react with most MICA-10 autoantibodies. This sequence encodes the human autoantibody MICA-10 crariable region heavy chain used in the method of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       glutamate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       metabolic
                                               15-FEB-2001
                                                                                AAC66525
                                                                                                              AAC66525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 331 BP; 66 A; 106 C; 91 G; 68 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 40-41; 68pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Richter W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (LABO-) LABOR KOCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-MAY-2000; 2000DE-1025840
                                                                                                                                                                                              301
                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caggatgtgctgactcagccgtcctccgtgtcttgggtccctggggccagaagggtctcccatc
                                                                                                                                                                                                               ttcggcagcgggaccaggctgaccgtcctgg
                                                                                                                                                                                                                                                                                | caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                                                                                                                                                                                                                                                 cttccaggaacagcccccaaactcctcatctatggtaacagcaatcggccctcaggggtc
                                                                                                                                                                                                                                                                                                                                                                                                              gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                              tcctgcactgggagcagctccaacatcggggcaggttatgatgtacactggtaccagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagtctgtggtgactcagccgccctcagtgtctggggccccaggggcagagggtcaccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-640702/74
                                                                                                                                                                                             ttcggcggacggaccaagctgaccgtcctag
                                                                                                                                                                                                                                                             caggctgaggatgaggctgattattactgccagtcctatgacagcagcctgagtggttca
                                                                                                                                                                                                                                                                                                                            cctgaccgattctctggctccaagtctggcacctcagcctccctggccatcactgggctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   n protein, useful for diagnosis of diabetes type I and diseases, is reactive with autoantibodies against both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       decarboxylase and islet cell antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                               (first entry)
                                                                                                                cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ĭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61.9%;
76.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rapp
                                                                                                                935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 206.2;
Pred. No. 8.8e
0; Mismatches
                                                                                                                ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ţ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dangel
                                                                                                                                                                                              331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .8e-50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            331;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      other
                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
```

0,

Human immune system associated

protein

HISAP-7 coding sequence

```
RESULT
AAH47733
ID AAH4
XX
AC AAH4
                                                                                                                                                      Ş
                                                                                                                                                                                 밁
                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                В
                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention provides the coding and protein sequences for a number of human immune system associated proteins (HISAPS). These can be used in the diagnosis and treatment of various autoimmune disorders, infections and cell proliferation diseases. The diseases include AIDS, adult respiratory distress syndrome, anaemia, asthma, atheroscierosis, Crohn's disease, irritable bowel syndrome, multiple sclerosis, myasthenia gravis, osteoarthritis, rheumatoid arthritis, scleroderma, systemic lupus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New human immune system associated proteins (HISAP) and polynucleotides encoding the HISAP, useful for diagnosing, treating or preventing immune or cell proliferative disorders or infections -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; immune system associated protein; HISAP-7; infection; autoimmune disease; cancer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 erythematosus, arteriosclerosis, cirrhosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (INCY-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US6135941-A
                          AAH47733
                                                                                                                                                                                   311
                                                                                    431
                                                                                                                                   371
                                                                                                                                                           241
                                                                                                                                                                                                           181
                                                                                                                                                                                                                                 251
                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                 191
                                                                                                                                                                                                                                                                                                                                131
                                                                                                           298
                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                          caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                  caggctgaggacgaggctgattattactgtgcatcgtatcaaagtacttacagtggt---
                                                                                                                                                                                cctgaccgattctctggctccaagtctggcacctcagcctccctggccatcactgggctc
                                                                                                                                                                                             gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                             acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                               cagtctgtgctgacgcagccgccctcagtgtctggggccccaggggcagagggtcaccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-030926/04
)B; AAB36209.
                                                                                                                                                                                                                                cttccaggaacagcccccaaactcctcatctatggtagtagaaatcggccctcaggggtc
                                                                                                                                                                                                                                                                               tcctgcactgggagcagctccaacatcggggcaggttatgatgtaccactggtaccagcag
                                                                                                                                  caggctgaggatgaggctgattattactgccagtcctatgacagcagcctgagtggtgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Column
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JL,
                                                                                                                                                                                                                                                                                                                                                                               Similarity 76.:
57; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INCYTE PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                          935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yue
                                                                                                                                                                                                                                                                                                                                                                                                                                          B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ен, Lal
Au-Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0049672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0049672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83-84;
                                                                                                                                                                                                                                                                                                                                                                                                                                          216
                                                                                                                                                                                                                                                                                                                                                                                        59.6%;
76.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                         A; 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54pp; English.
                          339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Corley
                                                                                                                                                                                                                                                                                                                                                                              Score 198.4; DB 22;
Pred. No. 2.1e-47;
0; Mismatches 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                         ü
                          ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                          248 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S,
                                                                                                                                                                                                                                                                                                                                                                                                                                          172 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Guegler
                                                                                                           333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ζ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immune disorder;
                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Baughn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MR;
                                                                                                                                                                                                                                                                                                                                                                               u
۲۰
                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                 310
                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                               190
                                                                                                                                                           297
                                                                                                                                                                                                                                                                                                                                                                               ۳,
```

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kurosawa
Okuno Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to producing gene libraries, comprising immunoglobulin light and heavy variable region. The method involves selecting light chain that binds with the heavy chain product to produce a functional conformation, producing a gene library comprising a collection of these light chain variable genes, and combining with gene library of heavy chain variable genes. The method is used for production of the production of the production of the production variable genes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    formation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Producing gene libraries and antibody libraries, involves selecting a light chain that binds to a heavy chain product to produce a functional formation, and producing a gene library of the light chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gene library;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 339 BP; 67 A; 104 C; 95 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Examples; p 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-FEB-2000; 2000JP-0050543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-FEB-2001; 2001WO-JP01298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-NOV-2001
                                                                     241
                                                                                                                                                181
                                                                                                                                                                                                                          121
301
                                                                                                                                                                                   181
                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                         ب
                                                                                                                                                                                                                                         gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                   acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                        caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggt---
                                                                                                                                                                                                                                                                                                                                                                                          caggatgtgctgactcagccgtcctccgtgtctgggtcccttgggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-565420/63.
grggrarrcggcggagggaccaagcrgaccgrccraggr
                 ---gttttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                             cctgaccgattctctggctccaagtctggcacctcagcctccctggccatcactgggttc
                                                                                                                                                                  cttccaggaacagcccccaaactcctcatctatggtaacagcaatcggccctcaggggtc
                                                                                                                                                                                                                                                                                               tcctgcactgggagcagctccaacatcggggcaggttatgatgtacactggtaccagcag
                                                                     caggctgaggatgaggctgattattactgccagtcctatgacagcagcctgagtggtcat
                                                                                                                                                                                                                                                                                                                                                                     caggctgtgctcactcagccgtcctcagtgtctggggtcccaggggcagagggtcaccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAG65569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDICAL & BIOLOGICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     y, Akaho
Shiraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antibody libraries.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Akahori Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immunoglobulin; antibody library; human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59.2%;
76.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Iba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Id
                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 197; DB 22;
Pred. No. 3.9e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Morino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shinohara
 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ĭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Takahashi
                                                                                                                                                                                                                                                                                                                                                                                                                                                6,
                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                               240
                                                                                                                                                                                 240
                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                          297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3
```

1:

δ.

```
NALTS8663
XIX DALTS
XIX HUMN
XIX HUMN
XIX HUMN
XIX Chee
X
                           Ω
                                                                       Query Match
Best Local Sim
Matches 257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-JAN-2000;
25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
                                                                                                                                                                                                                                                                                                          The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as lazheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Inmune system suppression, activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for recentral civity and inflamation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        such
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zhao
                                                                                                                                                                                                                                                                          assays for receptor activity, arthritis and inflammation, C.N.S disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-JUL-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAI58663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAI58663 standard; cDNA;
                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HYSE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-SEP-2000;
19-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-OCT-2001
                                                                                                                                                                                                                                                       Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 leukaemia;
                                ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J,
QΑ,
caggatytyctyactcagccytectccytytytctygytccctygygccagagyytctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-442253/47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acids and as central nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; SEQ ID NO 866; 10078pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polynucleotide
                                                                                                                                                                                                                                                   The sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAM39507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HYSEQ INC
                                                                                              Similarity
                                                                                                                                                                                       585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Liu C
Wang 2
Zhou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0488725.

2000US-055317.

2000US-0598042.

2000US-062312.

2000US-062312.

2000US-0653450.

2000US-0653191.

2000US-0693036.

2000US-0727344.
                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  u P,
                                                                                                                                                                                       BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                       113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Asundi V,
Wehrman T,
Goodrich
                                                                                                                                                                                                                                                     data
                                                                                                                                                                                     A; 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID
                                                                                           . 7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polypeptides, useful system injuries -
                                                                                                                                                                                                                                                     for this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    585
                                                                                                                                                                                     Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chen R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                       0;
                                                                    Score 195.4; DB 22; Pred. No. 1.3e-46; 0; Mismatches 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    866
                                                                                                                                                                                     156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nen R, Ma Y, Xu C, Xue AJ, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           English
                                                                                                                                                                                                                                                patent did
                                                                                                                                                                                     ç;
                                                                                                                                                                                     122
                                                                                                                                                                                  Ή;
                                                                                                                                                                                                                                                     not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qian XB,
Yang Y,
                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for treating
                                                                                                                                                                                     other;
                                                                                                                                                                                                                                                   form
                                                                       Indels
                                                                                                                  Length
                                                                                                                                                                                                                                                   part
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ren F,
Zhang
                                                                                                                585;
                                                                                                                                                                                                                                                   of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           disorders
                                                                                                                                                                                                                                                                                              Leukaemias
                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ç
                                                                                                                                                                                                                                                   the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wang
                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ď,
                                                                       ۲.
```

```
ARESULT ANZ 55144 JID ANZ 55144 JID ANZ 55144 JID ANZ 5714 JID ANZ 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
This sequence represents cDNA encoding an internalising humanised antibody, scFv F5, which specifically binds to the extracellular domain of the c-erbB-2 receptor, the protein product of the HBR/neu oncogene. The scFv F5 antibody binds to the epitope of the c-erbB-2 receptor that is bound by F5 antibodies. On binding the c-erbB-2 receptor, the antibody is transported into the cell. The c-erbB-2 receptor is a marker protein which is overexpressed by 30-50% of breast carcinomas and other adenocarcinomas, and thus provides a useful cell surface marker for specifically targetting tumour cells. The antibodies of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAZ55614;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAZ55614 standard;
                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Marks JD, Poul MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-APR-1998;
12-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Internalising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-MAR-2000
                                                                                                                                                                                                                                                                             Claim 45; Page 81; 85pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9955367-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HER/neu oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Antibody; c-erbB-2 receptor; marker;
                                                                                                                                                                                                                                                                                                                                  Novel internalizing antibodies used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124 cagtctgtgctgacgcagccgccctcagtgtctggggccccagggcagagggtcaccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tcctgcactgggagcagctccaacatcggggcaggttatgatgtacactggtaccagcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                        2000-072168/06
DB; AAY58235.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtggtattcggcggagggaccaagctgaccgtcctaggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---gttttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cttccaggaacagcccccaaactcctcatctatggtaacagcaatcggccctcaggggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               caggctgaggatgaggctgattattactgccagtcctatgacagcagcctgagtggttct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cctgaccgattctctggctccaagtctggcacctcagcctccctggccatcactgggctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           anti-c-erbB-2 receptor antibody scrv F5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0082953
99US-0250056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US07395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rtag= a
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
1..738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tumour-specific; internalisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Internalising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                     ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cancer; drug targetting;
                                                                                                                                                                                                                                                                                                                                     treat cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                anti-c-erbB-2 antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               non-immunogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ę
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SS
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cc may include cytotoxins such as ricin, abrin or Pseudomonas exotoxin;
cc radionuclides; ligands such as growth factors; therapeutic agents such
cc as vinblastine, vindesine or melphalan; ribozymes; or antisense
cc molecules. The antibodies may also be used for in vivo or in vitro
cc detection and/or quantitation of the c-erb-2 receptor and thus diagnosis
cc and/or localisation of cancers characterised by expression of c-erb-2.
cc Although antibodies have previously been used to target tumour cells,
cc their success has been limited. The utility of prior art antibodies has
cc been hampered by the paucity of tumour specific antibodies, antibody
cc immunogenicity, low binding affinity, and poor tumour penetration.
cc tumour specific human antibodies were available. However, the production
cc fumunogenicity could be avoided and toxicity reduced if high affinity
cc tumour specific human antibodies were available. However, the production
cc fumunogenicity antibodies using conventional hybridoma technology
cc has proven difficult. Also, most of the antibodies produced react with
cantigens that are also common to non-malignant cells, which makes them
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 254
                                                                                                                       Complementarity determining region; CDF hepatitis C virus; HCV; HCV infection;
                                                                                                                                                                              Nucleotide sequence of the L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unsuitable for use as tumour-targetting molecules. The antibodies of the invention overcome these difficulties, as they are targetted to a tumour-specific antigen, and avoid the problem of immunogenicity as they
                                                                                                        hepatitis C virus; HCV envelope glycoprotein;
                                                                                                                                                                                                                     29-OCT-2001
                                                                                                                                                                                                                                                                                          AAH74666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            are human in origin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         are used as tumour-targetting molecules for diagnosis and treatment. The antibodies can be attached to effector molecules. The effector molecules
                                       WO200158459-A1
                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                      643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             583
                                                                                                                                                                                                                                                                                                                                                                                703
                                                                                                                                                                                                                                                                                                                                                                                                                    298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                             gtgttcggcggagggaccaagctgaccgtgctaggt 738
                                                                                                                                                                                                                                                                                                                                                                                               gttttcggcagcgggaccagctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggt---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cttccaggaacagcccccaaactcctcatctatggtaacaccaatcggccctcaggggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tcctgcactgggagcagctccaacatcggggcaggttatggtgtacactggtaccagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acctgctctggaagcagcagcaattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                    caggctgaggatgaggctgattattactgccagttctatgacagcagcctgagtggttgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cctgaccgattctctggcttcaagtctggcacctcagcctccctggccatcactgggctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagtctgtgttgacgcagccgccctcagtgtctggggccccaggggcagagggtcaccatc
                                                                                                                                                                                                                                                                                        standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP; 145 A;
                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          204 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
Pred.
                                                                                                                                                                              chain variable region of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        232 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  193.6;
                                                                                                                                              CDR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 4.7e-46;
79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        157 T; 0 other;
                                                                                                                         R; single chain antibody; CD81; E2 protein; NS1 pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 21;
                                                                                                                           protein; NS1 protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 738;
                                                                                                                                                                                ScFv1-4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۲.
```

```
RESULT
AAH74670
ID AAH7
XX
AC AAH7
AC AAH7
XX
DT 29-C
XX
DE Nucl
XX
COmp
                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                    рь
                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence encodes the L chain variable region of a single chain antibody of the invention. The specification describes a substance can inhibit the binding between hepatitis C virus (HCV) and cells with potential HCV infection, cells with expression of CD81, or CD81. This substance is especially an antibody with affinity towards HCV E2/NS1 protein, containing amino acid sequences based on the complementarity determining region (CDR) 1, CDR2 and CDR3 of the H and L chain variable regions. The antibody inhibits the viral envelope glycoprotein. It is also a CD81 inhibitor. The antibodies and drugs are used for treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Remedies for hepatitis C containing substances with antiviral effects e.g. antibodies, proteins, sulfated polysaccharides and low-molecular compounds, by inhibiting binding of hepatitis C virus envelope glycoprotein or CD81 -
                                                                                                                        AAH74670 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 348 BP; 72 A; 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and/or prevention of hepatitis C, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-FEB-2001; 2001WO-JP00967
                                                              29-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MITS-) MITSUBISHI-TOKYO PHARM INC
                                                                                                                                                                                                   301
                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                  gaggtcttcggaaccggg
                                                                                                                                                                                                                  ttcggcagcgggaccagg 318
                                                                                                                                                                                                                                                                             caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                       cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                                                    cttccaggaacagcccccaaactcctcatctatggtaacaacaatcggccctcaggggtc
                                                                                                                                                                                                                                                                                                                                                                                                    gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                              caggctgaggatgaggctgattattactgccagtcctatgacagcagcctgagtgggttt
                                                                                                                                                                                                                                                                                                                        cctgaccgattctctggctccaagtctggcacctcagcctccctggccatcactgggctc
                                                                                                                                                                                                                                                                                                                                                                                                                                               tectgeactgggageageteeaacateggggeaggttatgatgtacactggtaceageag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caggctgtgctcactcagccgtcctcagtgtctgggcccccaggggcagagggtcaccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Page 82-83; 138pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shibui T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58.0%;
75.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seki M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 193.2; DB 2
Pred. No. 4.9e-46;
0; Mismatches 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yotsumoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97 G; 70 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matsuura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of hepatitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Miyamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
```

Complementarity determining region; CDR; single chain antibody; ScFv;

Nucleotide sequence of single chain antibody ScFv1-4.

```
QY
                                                                                                                                γQ
                                                                                                                                                                                      γo
                                                                                                                                                                                                                                           ρy
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                         δÃ
                                                      В
                                                                                                          밁
                                                                                                                                                              밁
                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence encodes a single chain antibody of the invention. The specification describes a substance can inhibit the binding between hepatitis C virus (HCV) and cells with potential HCV infection, cells with expression of CD81, or CD81. This substance is especially an antibody with affinity towards HCV E2/NS1 protein, containing amino acid sequences based on the complementarity determining region (CDR) 1, CDR2 and CDR3 of the H and L chain variable regions. The antibody inhibits the viral envelope glycoprotein. It is also a CD81 inhibitor. The antibodies and drugs are used for treatment and/or prevention of because the contained and contained the complementarity determining regions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Remedies for hepatitis C containing e.g. antibodies, proteins, sulfated compounds, by inhibiting binding of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hepatitis C virus; HCV envelope glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 915 BP; 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 36; Page 90-93; 138pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-FEB-2000; 2000JP-0034906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200158459-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo
                                                                                                                                                                                                                                                                                                                                                                                                                           hepatitis C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MITS-)
                                                      736
                                                                               241
                                                                                                           676
                                                                                                                                                               616
                            301
                                                                                                                                   181
                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                          496
                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                    ۲
                                                                                                                                                                                                                                                                                                                                                          Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens
                                                                                                                                                                          gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                      caggatgtgctgactcagccgtcctccgtgtctctgggtcccttgggccagaggggtctccatc
                                                                   caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                       acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-496986/54.
gaggtcttcggaaccggg
              ttcggcagcgggaccagg
                                                                                                                                                                                                                                                                       caggctgtgctcactcagccgtcctcagtgtctgggcccccagggcagagggtcaccatc
                                                     caggctgaggatgaggctgattattactgccagtcctatgacagcagcctgagtgggttt
                                                                                                       cctgaccgattctctggctccaagtctggcacctcagcctccctggccatcactgggctc
                                                                                                                                                              cttccaggaacagcccccaaactcctcatctatggtaacaacaatcggccctcaggggtc
                                                                                                                                                                                                                  tcctgcactgggagcagctccaacatcggggcaggttatgatgtacactggtaccagcag
                                                                                                                                                                                                                                                                                                                              240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MITSUBISHI-TOKYO PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shibui T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                virus; HCV;
                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or
                                                                                                                                                                                                                                                                                                                                                                                                                          or for diagnosis of hepatitis C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001WO-JP00967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
1.915
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product=
                                                                                                                                                                                                                                                                                                                                         58.0%;
75.5%;
                                                                                                                                                                                                                                                                                                                                                                                                 A; 266 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seki M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "SCFV 1-4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                infection; CD81;
                                                                                                                                                                                                                                                                                                                           Score 193.2; DB 22,
Pred. No. 6.4e-46;
Pred. No. 6.7e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yotsumoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INC
                                                                                                                                                                                                                                                                                                                                                                                                 277
                                                                                                                                                                                                                                                                                                                                                                                                 <u>ი</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                substances with antiviral effects polysaccharides and low-molecular hepatitis C virus envelope
                                                                                                                                                                                                                                                                                                                                                                                                 189 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matsuura
                                                                                                                                                                                                                                                                                                                                                                                                 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ε2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein; NS1 protein;
                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Miyamura
                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7
                                                      795
                                                                               300
                                                                                                          735
                                                                                                                                                               675
                                                                                                                                                                                        180
                                                                                                                                                                                                                    615
                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                          555
                                                                                                                                                                                                                                                                                                                            0;
В
```

```
AAH74679
III AAH7
XX
AC AAH7
XX
CDT 29-C
XX
NUC1
XX
NUC1
XX
COMP
KW COMP
KW COMP
KW COMP
KW COMP
XX
HOMC
XX
HOMC
XX
HOMC
XX
I3-F
PR
I1-F
XX
I1-F
XX
II-F
XX
II
                   Q
                                                                                                                 20
                                                                                                                                                                  DЬ
                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                              В
                                                                     B
                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                    Query
Best L
                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence encodes the H chain variable region of a single chain antibody of the invention. The specification describes a substance can inhibit the binding between hepatitis C virus (HCV) and cells with potential HCV infection, cells with expression of CD81, or CD81. This substance is especially an antibody with affinity towards HCV E2/NS1 protein, containing amino acid sequences based on the complementarity determining region (CDR) 1, CDR2 and CDR3 of the H and L chain variable regions. The antibody inhibits the viral envelope glycoprotein. It is also a CD81 inhibitor. The antibodies and drugs are used for treatment and/or prevention of hepatitis C, or for diagnosis of hepatitis C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Remedies for hepatitis C containing e.g. antibodies, proteins, sulfated compounds, by inhibiting binding of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hepatitis C virus; HCV envelope glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Complementarity determining hepatitis C virus; HCV; HCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAH74679;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAH74679 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 37; Page 103-105; 138pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-FEB-2000; 2000JP-0034906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200158459-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (MITS-) MITSUBISHI-TOKYO PHARM INC.
                                                                       616
                                                                                                                    121
                                                                                                                                                                                                                                                                496
                        181
                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                  1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagaggggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                           acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-496986/54
DB; AAG63639.
                                                                                                                                                                                                                                                              caggotgtgctcactcagccgtcctcagtgtctgggcccccagggcagagggtcaccatc
                                                                     cttccaggaacagcccccaaactcctcatctatggtaacaacaatcggccctcaggggtc
                                                                                                                                                                  tcctgcactgggagcagctccaacatcggggcaggttatgatgtacactggtaccagcag
                                                                                                                                                                                                                                                                                                                                                              240;
                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shibui T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence
                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  вP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001WO-JP00967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;
                                                                                                                                                                                                                                                                                                                                                                                  58.0%;
75.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seki M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       region; CDR; single chain antibody; infection; CD81; E2 protein; NS1 pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                            Score 193.2; DB:
Pred. No. 6.4e-46,
0; Mismatches 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yotsumoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  substances with antiviral effects polysaccharides and low-molecular hepatitis C virus envelope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Η,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matsuura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                              78;
                                                                                                                                                                                                                                                                                                                                                                                                           22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  other;
                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of.
                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ScFv1-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Miyamura
                                                                                                                                                                                                                                                                                                                                                                                                             915;
                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein;
                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ŧ,
                                                                       675
                                                                                                                                                                     615
                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                555
                                                                                                                                                                                                                                                                                                               60
                        240
                                                                                                                    180
```

cctgaccgattctctggctccaagtctggcacctcagcctccctggccatcactgggctc

```
RESULT 1
                                                                                                                                  Q
    밁
                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                    AASO3401-AASO3535 represent anti-adipocyte monoclonal antibody heavy and light chain coding sequences of the invention. The antibodies can be used in the treatment of obesity and obesity related diseases. The contibodies can be used to deliver drugs or pro-drugs directly to the fat mass of an obese patient or the antibody can be used as a therapeutic tiself. Antibodies binding specifically to adapocytes can be used to activate the immune system to destroy the calls by complement mediated lysis. The antibodies may be labeled with a detectable label such as cradiolabel, fluorescent or chemical group and used in methods of diagnosis in human subjects e.g. to determine the presence of adapocyte antipen on the surface of an adipocyte to detect or determine the presence or level of adipocytes in a cell or tissue sample. The cantibodies can be used as an alternative means of treatment for obese patients other than undergoling surgery to remove excess fat. Antibodies con different types of fat deposits can also be produced e.g. intra-
                                                         Query Match
Best Local Similarity
Matches 244; Conser
                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 167; 182pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Panel of specific binding members of antibody molecules which bind whole adipocytes is used in the treatment of obesity and obesity related diseases - \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Edwards BM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-OCT-2000; 2000WO-GB03900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       W0200127279-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAS03520 standard; cDNA;
                                                                                                                                 Sequence 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAU02620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CAMB-) CAMBRIDGE ANTIBODY TECHNOLOGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antibody; adipocyte; heavy chain; light chain; obesity; FAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAS03520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               heart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
gaggtcttcggaaccggg 813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ttcggcagcgggaccagg 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caggctgaggatgaggctgattattactgccagtcctatgacagcagcctgagtgggttt 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-282031/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               disease;
                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                 BP; 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Main SH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        anti-adipocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0158812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complementarity determining region; CDR; ss.
                                                                                                                               A; 101 C;
                                                                      58.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vaughan TJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        monoclonal antibody light chain,
                                                         Score 193; DB 22;
Pred. No. 5.5e-46;
0; Mismatches 85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВÞ
                                                                                                                               83 G;
                                                                                                                              77 T; 0 other;
                                                                                       Length 330;
                                                          Indels
                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FAT
                                                         Gaps
   60
                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ៥
                                                          0;
```

```
AAQ36134
AC AAQ3
XX AAQ
AC AAQ
XX AAQ
AXX MH411
XX MH411
XX MH411
XX Namm
XX N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                   (SUMO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exon
                                                                                                                                                     Recombinant human antibody - lymphocyte strain as the host
                                                                                                                                                                                                                                           WPI; 1993-032623/04.
                                                                                                                                                                                                                                                                                                                                                     06-JUN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                06-JUN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                           14-DEC-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JP04360696-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; light chain; recombinant;
Namalwa; microbial infection; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MH4H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAQ36134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAQ36134 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ttcggcagcgggaccaggctgaccgtcct 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cacccaggcaaagcccccaaactcatgatttatgaggtcaataagcgcccctcaggggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tcctgcactggaaccagcagtgacgttggttgttataactatgtctcctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caggctgaggatgaggctgattattactgcagctcatatgcaggcaacgacagtgtgctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cctgatcgcttctctggctccaagtctggcaacacggcctccctgaccgtctctagactc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MAb light chain coding sequence
                                                                                                                                                                                                                                                                                   SUMITOMO
                                                                                                                                                                                                                         AAR31535.
                                                                                                          Fig 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                     91JP-0163886
                                                                                                                                                                                                                                                                                                                                                                                                91JP-0163886
                                                                                                       27pp;
                                                                                                                                                                                                                                                                                   CHEM CO LTD
SEIYAKU KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /number= Intron
267..610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           153..266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105..152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
105..610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /number- Exon 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /number= Exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .610
                                                                                                          Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         628
                                                                                                                                                         host
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                         produced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             monoclonal;
                                                                                                                                                                           using
                                                                                                                                                                              new
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
```

This sequence encodes the light chain of a recombinant human monoclonal antibody (MAD) designated MH4H7. This sequence was introduced in to a Namalwa celll strain which was cultured. The MAD may be used in a drug for the prevention and treatment of

0;

```
RESULT :
                                                                                                                                                                                                                                                                                                                                                                                                                                             ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOXX
                                                                                                                                                                                                                                                                                                                                                                                         Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                Tang YT,
Hillman
The present invention provides the coding and protein sequences for number of human immune system associated proteins (\mathtt{HISAPS}). These \alpha
                                             New human immune system associated proteins (HISAP) and polynucleotides encoding the HISAP, useful for diagnosing, treating or preventing immune or cell proliferative disorders or infections \,
                            Claim 3; Column 87-90;
                                                                                                                                                               27-MAR-1998;
                                                                                                                                                                                27-MAR-1998;
                                                                                                                                                                                                                    US6135941-A.
                                                                                                                                                                                                                                                                  Human;
                                                                                                                                                                                                                                                                                    Human
                                                                                                                                                                                                                                                                                                                         AAC66528;
                                                                                                                                                                                                                                                                                                                                           AAC66528 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      diseases
                                                                                                                                            (INCY-)
                                                                                                                                                                                                  24-OCT-2000
                                                                                                                                                                                                                                       Homo
                                                                                                                                                                                                                                                         infection;
                                                                                                                                                                                                                                                                                                       15-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                              518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            338
                                                                                                                                                                                                                                                                                                                                                                                         578
                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                              12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
mes 245; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctcccatc
                                                                                                                                                                                                                                                                                                                                                                                                 ttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                              gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                    2001-030926/04.
DB; AAB63212.
                                                                                                                                                                                                                                                                                                                                                                                                                                        cacccaggcaaagcccccaaactcgtgatttatgctgtcagtaatcggccctcaggggtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tcttgcactggaaccagcagtgacattggtggttataactatgtctcctggtaccaacaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cagtctgccctgactcagcctgcctccgtgtctgggtctcctggacagtcgatcaccatc
                                                                                                                                                                                                                                       sapiens
                                                                                                                                                                                                                                                                                                                                                                                        ttcggcggaggaccaagctgaccgtcctaggt 610
                                                                                                                                                                                                                                                                                                                                                                                                                             caggctgaggacgaggctgattattactgcaactcagatgcgagcaccagcaaaatgggtt
                                                                                                                                                                                                                                                                                   immune
                                                                                                              , JL,
                                                                                                                                                                                                                                                                  immune
                                                                                                                                            INCYTE PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caused
                                                                                                                          Yue
                                                                                                                                                                                                                                                        autoimmune disease; cancer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₿P;
                                                                                                                                                                                                                                                                                   system associated
                                                                                                                Au-Young
                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                          H
                                                                                                                                                              98US-0049672
                                                                                                                                                                                 98US-0049672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    þу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109
                                                                                                                          Lal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    microbial infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57.7%;
73.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Α,
                                                                                                                                                                                                                                                                associated protein; HISAP-10;
                                                                                                                Ġ,
                          54pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202
                                                                                                                                                                                                                                                                                                                                           891
                                                                                                                         Corley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 192.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 170 G;
                                                                                                                                                                                                                                                                                   protein HISAP-10 coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                          ,
N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    No. 1.1e-45; smatches 88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 147 T;
                                                                                                                         Guegler
                                                                                                                                                                                                                                                                                                                                                                                                           333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0 other;
                                                                                                                         Ž,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                 immune disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                        Baughn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      628;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
or a
                                                                                                                                                                                                                                                                                                                                                                                                                             577
                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

þe

P-PSDB;

AAR13184

```
RESULT 13
AAQ12840
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8888888
                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local s
Matches 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     used in the diagnosis and treatment of various autoimmune disorders, infections and cell proliferation diseases. The diseases include AIDS, adult respiratory distress syndrome, anaemia, asthma, atherosclerosis, crohn's disease, irritable bowel syndrome, multiple sclerosis, myasthenia gravis, osteoarthritis, rheumatoid arthritis, scleroderma, systemic lupus
                                                                                                                                                                                CDS
                                                                                                                                                                                                                                 Monoclonal antibody;
                                                                                                                                                                                                                                                                                                         AAQ12840;
                                                                                                                                                                                                                                                                                                                              AAQ12840 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             erythematosus, arteriosclerosis, cirrhosis and cancer
           WPI; 1991-234064/32
                                                                                   08-NOV-1989;
                                                                                                                                                                                                                                                                Variable region of lambda
                                                                                                                                                                                                                                                                                     17-OCT-1991
                                                              08-NOV-1989;
                                                                                                        28-JUN-1991
                                                                                                                             JP03151876-A
                                                                                                                                                                                                              Homo
                                                                                                                                                                                                                                                       Pseudomonas
                             (SUMO ) SUMITOMO
                                                                                                                                                                                                                                                                                                                                                                                 391
                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                          331
                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 acctgctctggaagcagcagcaacattggaggtaatgcttatgtggggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 73.6 es 245; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                          ttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                                                                                    caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ttcggcggagggaccaagctgaccgtcctaggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tctaatcggttctctggctccaagtctggcaacacggcctccctgaccatctctgggctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tccccaggcacggcccccaaactcatgatttatgaggtcagtaatcggccctcaggggtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tcctgcactggaaccagcagtgacgttggttgttataactatgtctcctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                        caggctgaggacgaggctgattattactgcagctcatatgtaggcaacaacattgtggta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         891 BP;
                                                                                                                                                                                                                                                       aeruginosa.
                                                                                                                                                                                                                                                                                     (first entry)
                                                              89JP-0291981.
                                                                                  89JP-0291981
                                                                                                                                                /*tag= a
/label= LH
/note= "Claim 5"
                                                                                                                                                                              Location/Qualifiers 562..892
                              SEIYAKU
                                         CHEM IND KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         207 A;
                                                                                                                                                                                                                                                                                                                              DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57.7%;
                                                                                                                                                                                                                                  SS
                                                                                                                                                                                                                                                                                                                              1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        287 C; 222 G; 175 T; 0 other;
                                                                                                                                                                                                                                                                type light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 192.2;
; Pred. No. 1.2e
0; Mismatches
                                                                                                                                                                                                                                                                                                                              ВP
                                                                                                                                                                                                                                                                                                                                                                                                    333
                                                                                                                                                                                                                                                                                                                                                                                 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.2e-45;
hes 88;
                                                                                                                                                                                                                                                                specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                 LPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           891;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
```

```
ARESULT 1
AAF92354
AAF 92354
XX AAF9
AC AAF9
XX AAF9
XX BOV1
XX BOV1
XX BOV2
XX BOV2
XX BOS
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           XXCCCCXXXXPPPPXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The region encoding the VL region is used antibody with a IgM havy chain V region. antigenic determinant on the outside core See also AAO12839.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human antibody gene and useful in mass -prodn. coutside core antibody.
                                                               Havukkala IJ,
                                                                                                                                                                                                                                                                   01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                Bovine; mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                      Bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1044 BP; 200 A; 300 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Fig 3; 16pp; Japanese
                                                                                                                                                                          23-AUG-1999;
                                                                                                                                                                                                                     23-AUG-2000;
                                                                                                                                                                                                                                                                                                         WO200114553-A1
                                                                                                                                                                                                                                                                                                                                                       Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAF92354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAF92354 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9tcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagtctgccctgactcagcctgcctccgtgtctgggtctcctggacagtcgatcaccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ttcggcggaggaccaagctgaccgtcctaggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tctcatcgcttctctggctccaagtctggcaacacggcctccctgaccatctctgggctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cacccaggcaaagcccccaaactcgtgatttatgctgtcagtaatcggccctcaggggtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tcttgcactggaaccagcagtgacattggtggttataactatgtctcctggtaccaacaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caggctgaggacgaggctgattattactgcaactcagatgcgagcaccagcaaatgggtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                al Similarity
245; Conser
                                                                                                          GENESIS RES
NEW ZEALAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in mass -prodn. of human core antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                     2000WO-NZ00166
                                                                 Gleen
                                                                                                                                                                            99US-0150330
                                                                                                                                                                                                                                                                                                                                                                                                                                           tissue
                                                                                                                                                                                                                                                                                                                                                                                             gland; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cDNA;
                                                                                                        PASTORAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57.7%;
73.6%;
                                                               ĭ
                                                                                                        DEV CORP LTD.
ASTORAL AGRIC
                                                                                                                                                                                                                                                                                                                                                                                                                                           derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            corresp. recombinant plasmid or virus
of human anti Pseudomonas aeruginosa LE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             464
                                                               Grigor MR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA #67
                                                                                                                                                                                                                                                                                                                                                                                                tumour; angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                192.2; DB 12;
No. 1.3e-45;
                                                                                                          RES INST LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>ن</u>
                                                                 Molenaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         251 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to construct a recombinant The antibody recognises an in LPS of P. aeruginosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention relates to proteins derived from bovine mammary gland cells. The invention is useful for stimulating bovine mammary gland cell growth and function, inhibiting the growth of various mammary gland cancer cells, inhibiting angiogenesis and vascularization of tumours, or modulating the growth of blood vessels in a mammal.
WPI; 2001-398131
P-PSDB; AAG62957
                                                                                                                                                                                                              Antibody; light chain; VL; amyloid protein; blood brain barrier; endothelial cell; brain cell antigen; inflammation; adhesion mol transferrin receptor; neurological disease; Alzheimer's disease; prion disease; AIDS-related dementia; epilepsy; brain injury; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New polypeptides and polynucleotides encoding the polypeptides, which are expressed in bovine mammary gland tissue, useful for stimulating mammary gland growth or function, or inducing differentiation of milk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Page 59; 97pp;
                                     Webster C,
                                                                                       13-DEC-1999;
                                                                                                              27-NOV-2000;
                                                                                                                                        21-JUN-2001
                                                                                                                                                                 WO200144300-A2
                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                             Nucleotide sequence of variable light chain
                                                                                                                                                                                                                                                                                                       01-OCT-2001
                                                                                                                                                                                                                                                                                                                                                       AAH42401 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 464 BP; 99 A; 161 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118
                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58
                                                                                                                                                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -
                                                                                                                                                                                                                                                                                                                                                                                                                 atcacctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaa
              2001-398131/42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atccccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caggtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  atcacctgctctggaaccagcagcaatgttggagatggcgattatgtgagttggttccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctccaggccgaggacgaggcggattatttctgttcatctcccgacaccactaacaatgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ctccaggctgaggacgagtcgattattactgtgcatcgtatcaaagtacttacagtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtctccgagcgattctccggctccaggtctggcaacacagccaccctaaccatcagctcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cagatcccaggatcgggccccagaacagtcatctttggtgcgactcagcgaccctctggg
                                                              CAMBRIDGE ANTIBODY TECHNOLOGY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cells
                                       Osbourn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                               2000WO-GB04501
                                                                                       9908-0170599
                                                                                                                                                                                                                                                                                                                                                        DNA;
                                     'n
                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57.1%;
80.7%;
                                       Ward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 190.2; I Pred. No. 3.9e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                       ВP
                                     ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120 G; 84
                                       Miller
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.9e-45;
hes 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Τ,
                                                                                                                                                                                                                                                                                                                                                                                                                                           332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                             fragment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                        adhesion molecule;
                                                                                                                                                                                                                                                                             clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             464;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                             G93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           237
```

0;

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              binding member comprising the D5 VH and/or VI variable domain when bound to human serum amyloid protein, to pass through a mammalian blood brain barrier (BBB). The panel is useful for the selection of specific binding members with a desired property such as ability to cross BBB, ability to bind endothelial cells or other brain cell antigen, ability to bind areas of inflammation in the brain or BBB breakdown or ability to bind thracellular adhesion molecules and to bind transferrin receptor. The antibodies are useful in diagnosis, prophylaxis and treatment of human or animal body, including neurological diseases, such as Alzheimer's disease, prion disease, AIDS-related dementia, epilepsy and traumatic brain injury and any diseases involving inflammation occurring within the brain or central nervous system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence encodes an antibody variable light chain (VL) fragment. The fragment is used to produce a mixture or panel of 5 different specific binding members, but comprising an antibody VH and/or VL variable domain and capable, when displayed on the surface of filamentous bacteriophage particles or in the case of a specific binding member comprising the D5 VH and/or VL variable domain when
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mixture or panel of antibodies for selecting specific binding members that cross the blood brain barrier, for use in delivering different molecules and treating neurological diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 333 BP; 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Page 103; 109pp; English.
181
                                                      181
                                                                                                            121
                                                                                                                                                                     121
                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                     1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                     gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcgggggatc 180
                                                                                                                                                                                                                                                   acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                                                                                                                        tcctgcactggaaccagcagtgacgttggttgttataactatgtctcctggtaccaacaa
                                                                                                                                                                                                                                                                                                                                       cagtctgtgctgactcagcctgcctccgtgtctgggtctcctggacagtcgatcaccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                            243;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۸,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99 C; 87 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 189.6; DB 22; Length Pred. No. 5.2e-45; O; Mismatches 89; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                240
                                                                                                            180
                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

γ

Search completed: August 11, Job time: 7701 sec 2002, 22:10:21

В QΥ В Š В õ 밁 20 В

밁 Š

301 301 241 241

ttcggcagcgggaccaggctgaccgtcctggg

ttcggcggagggaccaagctgaccgtcctagg

caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt totaatcgcttctctggctccaagtctggcaacacggcctccctgacaatctctgggctc

240

caggctgaggacgaggctgattattactgcagctcatatacaaccaggggcactcgagtt 300

```
Minimum
Maximum
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ..
Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hits satisfying chosen parameters:
                                                                                                                                                                                                                                                             6: 6: 9: 9: 9: 110: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 1111: 111: 1111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 111: 11: 111: 111: 111: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 11: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenEmbl:*
1: gb_ba:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-786-015-3
333
1 caggatgtgctga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1797656 segs, 10463268293 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          August 11, 2002, 22:03:49 ; Search time 1984.69 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 4.5
Copyright (c) 1993 - 2000 Com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caggatgtgctgactcagcc.....ccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_pat: *
gb_ph: *
gb_pr: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_om:*
                                                                                                                                                                                                                                                       em_htg_hum:*
em_htg_inv:*
em_htg_other:*
em_htgo_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                em_mu:*
em_or:*
em_ov:*
em_pat:*
em_ph:*
em_ph:*
em_ph:*
em_ro:*
em_ro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_ro:*
gb_sy:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_fun:*
em_hum:*
em_in:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_un:*
                                                                                                                                                                                                                                                                                                                                                                        em_v1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_ba:*
DВ
  Ħ
                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (without alignments)
3511.146 Million cell updates/sec
Description
```

.6 71.7 330 4 AF023843 AF	240 72.1 336 4 BTA012802 AJ	40.4 72.2 629 4 AF040909 AF	.6 72.6 336 4 AF172699 AF	41.8 72.6 339 4 AF172694 AF	41.8 72.6 333 4 BTA012801 AJ	242 72 7 629 4 AF040916 AF	.2 72.7 368 4 BTU32264 U3	42 6 72 9 393 4 BTII32255	43.4 73.1 333 4 RTA012799 AJ	43.4 73.1 333 4 AF015800 AF	245 73 6 339 4 AF172685 AF	45.2 /3.6 /30 4 AF0/2/041 AF	45.5 /4.1 333 4 AF1/2583 AF	.6 74.1 333 4 AF015793 AF	46.6 74.1 333 4 AF015792 AF	46.6 74.1 333 4 AF015791 AF	48.2 74.5 333 4 AF172701 AF	48.2 74.5 333 4 AF015799 AF	48.2 74.5 330 4 AF172692 AF	48.6 74.7 399 4 BTU32250 U3	49.8 75.0 333 4 AF015798 AF	51.4 75.5 333 4 AF015801 AF	51.4 75.5 333 4 AF015795 AF0	53 76.0 333 4 AF172682 AF1	253 76.0 330 4 AF172686 AF1	.4 /0.4 330 4 AFI/2090 AFI	54.8 /5.5 538 4 AFU4U919 AFU	56.2 76.9 330 4 AF172696 AF1	57.6 77.4 336 4 AF172688 AF1	57.8 77.4 330 4 AF172687 AF1	59.4 77.9 333 4 AF172695 AF1	59.6 78.0 330 4 AF015797 AF0	59.8 78.0 393 4 BTU32254 U32	59.8 78.0 393 4 BTU32249 U32	261 78.4 333 4 AF172697 AF1	61.4 78.5 393 4 BTU31106 U31	65.8 79.8 333 4 AF172690 AF	.4 80.3 333 4 AF172693 AF	67.4 80.3 333 4 AF172691 AF	269 80.8 333 4 AF172684 AF	.4 80.9 393 4 BTU32261 U3	72.2 81.7 333 4 AF172689 AF
023843 Bos taur	012802 Bos taur	040909 Ovis ari	172699 Ovis ari	172694 Ovis ari	J012801 Bos tau	F040916 Ovis ari	32264 Bos ta	32255 Bos taurus	012799 Bos taur	F015800 Bos taur	F172685 Ovis ar	FOADGOOD OW'S AN'	F1/2683 OVIS ari	F015793 Bos taur	F015792 Bos taur	F015791 Bos t	F172701 Ovis ari	F015799 Bos tau	F172692 Ovis ari	32250 Bos tauru	F015798 Bos tau	F015801 Bos taur	F015795 Bos taur	F172682 Ovis	F172686 Ovis ari	F015796	F172609 Owis ari	F172696 Ovis a	F172688 Ovis ari	F172687 Ovis a	F172695 Ovis ari	F015797 Bos taur	32254 Bos tauru	32249 Bos taurus	F172697 Ovis a	31106 Bos taurus	172690 Ovis ari	172693 Ovis a	172691 Ovis ari	F172684 Ovis ari	32261 Bos taurus	172689 Ovis ar

ALIGNMENTS

JOURNAL REFERENCE ACCESSION VERSION KEYWORDS REFERENCE AUTHORS TITLE RESULT AF172689 SOURCE DEFINITION Locus AUTHORS TITLE JOURNAL ORGANISM Bovidae; Caprinae; Ovis.

1 (bases 1 to 333)

White,G.P., Meeusen,E.N.T. and Newton,S.E.
A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus Ovis aries Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Unpublished
2 (bases 1 to 333)
White G.P., Meeusen, E.N.T. and Newton, S.
Direct Submission AF172689 333 bp mRNA linear MAM 29-AUG-1999 Ovis aries clone 34 immunoglobulin light chain variable region (IGLV) mRNA, partial cds.
AF172689 Submitted (26-JUL-1999) School of Veterinary Science, The Centre AF172689.1 GI:5802425 sheep.

```
TITLE
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                            KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                     RESULT
BTU32261
LOCUS
                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                    VERSION
                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 81.7%;
Best Local Similarity 88.6%;
Matches 295; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1
                                    1 (bases 1 to 393)
Ivanov,V.N., Karginov,V.A., More Molecular cloning of a bovine in Gene 67 (1), 41-48 (1988)
88329743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caggatgtgctgactcagccgtcctccgtgtctgggtccctgggccagagggtctccatc
                                                                                                                                                                                                                                                                                                    tloggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                     CAGGCTGGGGACGAGTCCGATTATTACTGTGCGTCTTATCAGACTGATGACAGTGAGATT
                                                                                                                                                                                                                                                                                                                                                                    GTCCCAGGATCAGCCCCCAAAATCCTCATTTATGGTGCAACCAGTCGAGCCTCGGGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9tcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTGCTCTGGAAGCAGCAGCAACATTGGATATGGTAATTATGTGAGCTGGTACCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                                                                                            Bos taurus clone 16 immunoglobulin lambda light chain variable region (Vlambdala) mRNA, partial cds.
                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Bovinae; Bos.
    Jackson, T.,
Nucleotide
                                                                                                                                              Bos taurus
                                                                                                                                                                                    U32261.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for Animal Melbourne,
                          (bases 1 to 393)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Animal Biotechnology, The University of Melbourne, Parkville, bourne, Victoria 3052, Australia Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="immunoglobulin light chain variable region"
/protein_id="AAD51679.1"
/db_xref="Gi:5802426"
/translation="QAVLTQPSSYSRSLGQSVSITCSGSSSNIGYGNYVSWYQQVPGS
APKILIYGATSRASGIPDRFSGSRFGNYATLTISSLQAGDESDYYCASYQTDDSEIFG
SGTRLTYLG"
97 c 91 g 77 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene≖
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="34"
                                                                                                                                                                                    GI:1276622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'tissue_type="abomasal lymph node"
  , Morris, B.A. sequences an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ne="IGLV"
.>333
  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 272.2; DB Pred. No. 2e-63; 0; Mismatches
             and
and Sanders, P.G. expression of cDNAs
                                                              Morozov,I.V. and ne immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                              Gorodetsky,S.
lambda chain
  for
  D
  bovine
                                                                                                                                                                                                                                    MAM 25-APR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                  Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
REFERENCE
            Qy
                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
JOURNAL
MEDLINE
                                    Matches
                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                      misc_feature
                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anti-testosterone monoclonal IgG1 antibody Mol. Immunol. 29 (5), 667-676 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92261635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         95403981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 393)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 393)
                                                                                                                 74
                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                        region"
67. .132
                                                                                                                                                                                                                                                                                                                                                 /note="encodes
133. .174
                                                                                                                                                      /note="encodes 367. .393
                                                                                                                                                                                            /note="encodes 337. .366
                                                                                                                                                                                                                                                                                                             /note="encodes
175. .219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cell_type="lymphocyte"
/tissue_type="spleen"
/dev_stage="adult"
                                                                                                                                                                                /gene="Vlambdala"
                                                                                                                                                                                                                     /gene="Vlambdala"
                                                                                                                                                                                                                                                             /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                /gene="Vlambda1a"
                                                                                                                                                                                                                                                                                                                                      /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                          /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Vlambda1a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Bos taurus"
/db_xref="taxon:9913"
                                                 80.9%;
                                    0;
```

```
1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aitken,R.

Direct Submission

Submitted (25-JUL-1995) Robert Aitken, Microbiology, Institute of Submitted (25-JUL-1995) Robert Aitken, Microbiology, Institute of Biomedical and Life Sciences, University of Glasgow, Joseph Black Building, Glasgow G12 8QQ, UK

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sinclair,M.C., Gilchrist,J. and Aitken,R.
Molecular characterization of bovine V lambda regions
J. Immunol. 155 (6), 3068-3078 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="encodes framework region 220 .240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /protein_id="AAC48561.1"
/db_xref="G:11276623"
/db_xref="G:11276623"
/translation="MSTMAWSPLLLTLVTLCTGSWAQAVLTQPSSVSGSLGQRVSITC
SGSSSNVGTGNYVSWFQQIPGSAPRTLIYGATSRASGVPDRFSGSRSGNTATLTISSL
                                                                                                                                                                                              /gene="Vlambdala"
/note="encodes framework region
132 c 105 g 82 t
                                                                                                                                                                                                                                                                                                                                                                                             /note="encodes complementarity-determining
241. .336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="Vlambdala"
/note="Vlambdal family, group c"
/note="Vlambdal family, lambda light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QAEDEADYFCASYQSSNTAVFGSGTTLTV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Vlambda1 family, group
/codon_start=1
                                                                Score 269.4; DB 4; Pred. No. 1.1e-62; 0; Mismatches 36;
                                                                                                                                                                                                                                                                                  complementarity-determining
                                                                                                                                                                                                                                                                                                                                                   framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complementarity-determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lambda light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ر<sub>•</sub>
                                                                                                          Length
                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain
                                                                                                                                                                                                                                                                                     region
                                                                                                                                                                                                                                                                                                                                                                                                                   region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 variable
                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                variable
                                                                Gaps
                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۳,
                                                                  0;
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
AF172684
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                       Query Match
Best Local S
Matches 293
                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttcggcagcgggaccaggctgaccgtc 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 293;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCGGCAGCGGGACCACACTGACCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGCTGAGGACGAGGCAGATTATTTCTGTGCATCTTATCAGAGTAGTAACACAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGGCCAGAGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
2 (bases 1 to 333)
Birect Submission
Submitted (26-JUL-1999) School of Veterinary
Submitted (26-JUL-1999) The University of N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ovis aries
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         333 bp mRNA linear MAM Ovis aries clone 17 immunoglobulin light chain variable (IGLV) mRNA, partial cds. AF172684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-Chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Melbourne,
                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Animal Biotechnology, The University of the University of States o
                           Conservative
                                                                                                                                                66
                                                                                                                                                a
                                                                                                                                            /translation="QAVLTQPSSVSRSLGQSVSITCFGSSSNVGYGNYVSWYQQVPGSAPKLLIYGATSRASGVPDRFSGSRFGNTAALTISSLQAEDEADYYCAFYDSSNYGVFGSGTRLTVLG"
95 c 92 g 80 t
                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="17"
                                                                                                                                                                                                                           /codon_start=1
/product="immunoglobulin light chain variable
/protein_id="AAD51674.1"
/db_xref="GI:5802416"
                                                                                                                                                                                                                                                                                                              /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                      /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="abomasal lymph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:5802415
                                        88.
                                          . 0%;
                       0
                     Score 269; DB 4;
Pred. No. 1.5e-62;
0; Mismatches 40
                                                                                                                                                                                                                                                                                                                                                                                                 node'
                         40;
                                                             Length 333;
                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       y Science, 'Melbourne,
                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The Centre, Parkville,
                                                                                                                                                                                                                                                                        region'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-AUG-1999
                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         126
                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
AF172691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                     ORIGIN
                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FOCUS
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ц
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sheep
                                                                                                      63
```

```
caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caggctgaggacgaggccgaftattactgtgcatcgtatcaaagtacttacagtggtgtt 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCCCAGGATCAGCCCCCAAACTCCTCATTTATGGTGCAACCAGTCGAGCCTCAGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTGCTTTGGAAGCAGCAACGTTGGATATGGTAATTATGTGAGCTGGTACCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BOVLIDE: CMPANNES 1 to 333)

1 (bases 1 to 333)

White,G.P., Meeusen,E.N.T. and Newton,S.E.

White,G.P., Meeusen,E.N.T. and Newton,S.E.

A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal abomasal lymph node of sheep infected with the gastrointestinal abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (26-JUL-1999) School of Veterinary Science, The Centre for Animal Biotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF172691 333 bp mRNA linear MAM 29-AUG
Ovis aries clone 81 immunoglobulin light chain variable region
(IGLV) mRNA, partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 333)
White,G.P., Meeusen,E.N.T. and Newton,S.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF172691.1 GI:5802429
SGTRLTVLG"
a 102 c
                                            /gene="IGLV"
/codon_start=1
/codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="AanD51681.1"
/protein_id="AanD51681.1"
/db_xref="GI:5802430"
/translation="QAVLTQPSSVSKSLGQSVSITCSGSSSDVGYGNYVGWFQQVPGS
/translation="QAVLTQPSSYSKSLGQSVSITCSGSSSDVGYGNYVGWFQQVPGS
                                                                                                                                                                                                                             /gene="IGLV"
<1. .>333
                                                                                                                                                                                                                                                                                                                              /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="81"
                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                    /tissue_type="abomasal
  90
g
  78
                                                                                                                                                                                                                                                                                                         lymph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
```

80.3%; 87.7%;

Score Pred.

267.4; DB No. 4e-62;

4.

Length 333;

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
AF172693
                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρ
                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                   gene
                                                                                                                                            CDS
                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCGGCAGCGGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGCTGACGACGAGGCCGATTATTACTGTGCATCTTATGACACCAGTAGCGATGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caggatgtgctgactcagccgtcctccgtgtctgggtccctgggccagaggggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCTGCTCTGGAAGCAGCAGCGACGTTGGATATGGTAATTATGTGGGCTGGTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAAGTCCCTGGGCCAGAGTGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             292;
                                                                                                                                                                                                                                                                                                                                                                         Ovis aries
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
Bovidae; Caprinae; Ovis.
1 (bases 1 to 333)
1 (bases 1 to 333)
                                                                                                                                                                                                                                                    2 (bases 1 to 333) White.G.P., Meeusen,E.N.T. and Newton,S.E. Direct Submission Submitted (26-JUL-1999) School of Veterinary Science, The Centre for Animal Biotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                     A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                sheep.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF172693 33 bp
Ovis aries clone 64 immunoglobulin
(IGLV) mRNA, partial cds.
AF172693
AF172693.1 GI:5802433
                                                                                                                                                                                                                                                                                                                         Unpublished
                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                    Ø
                                   SRTRLTVLG"
a 101 c
                                                        /gene-"IGLV"
/codon_start=1
/codon_start=1
/rodouct='Immunoglobulin light chain variable region"
/protein_id-"AAD51683.1"
/db_xref-"GI:5802434"
/db_xref-"GI:5802434"
/translation="QAPLTQPSSVSKSLGQRVSITCSGSSDNVGYGNNVGWYQQVPGS
APKLLIYGATRRASGVPDRFSGSRSGNTATLTISSLQAEDEADYYCAFYDHGSWGVFG
                                                                                                                                                     /gene="IGLV"
                                                                                                                                                                                                      /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                    /tissue_type="abomasal
1. .333
                                                                                                                                                                                           /clone="64"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                    95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                   g
                                                                                                                                                                              lymph node"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    333
                                   73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ear MAM
variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
AF172690
LOCUS
                                                                                                                                                                                                                                                                                       JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
BASE COUNT
ORIGIN
                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local (
                                                                                                                    CDS
                                                                                                                                           gene
                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       σ
                                                                                                                                                                                                                                                                                                                                                                                                              Ovis
                                                                                                                                                                                                                                                                                                                                                                                                                        sheep.
```

```
acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ttcggcagcgggaccaggctgaccgtcctgggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGGCTGAGGACGAGGCCGATTATTACTGTGCATTTTATGACCACGGTAGTTGGGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCCCAGGATCAGCCCCCAAACTCCTCATTTATGGTGCAACCCGTCGAGCCTCGGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTGCTCTGGAAGCAGCGACAACGTTGGATATGGTAATAATGTGGGCTGGTACCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCGGCAGCAGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                             A single-chain variable region immunoglobulin abomasal lymph node of sheep infected with the nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF172690
Ovis aries clone 100
                                                                                                                                                                                                                                                                                              Submitted (26-JUL-1999) School of Veterinary Science, The Centre for Animal Biotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 333)
White, G.P., Meeusen, E.N.T. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                             White, G.P., Meeusen, E.N.T. and Newton, S.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (IGLV) mRNA,
AF172690
                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF172690.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
   63
SGTRLTVLG"
a 100 c
                                /codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="AAD51680.1"
/db_xref="GI:5802428"
/translation="QAVLTQPSSVSKSLGQGVSITCSGSSSNVGYGNYVSWFQLIPGS
APKVLIYGAASRASGVPDRFSGSRSGNTATLTISSLQAEDEADYYCASYDSSSSGAFG
                                                                                                                                                                                                     /db_xref="taxon:9940"
/clone="100"
                                                                                                                                               /gene="IGLV"
<1. .>333
                                                                                                                               /gene="IGLV"
                                                                                                                                                                                              tissue_type="abomasal lymph node"
                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
   94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         267.4; DB
No. 4e-62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             đđ
                                                                                                                                                                                                                                                                                                                                                               Newton, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              333
   76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA linea
n light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                            library from the e gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MAM 29-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 7
BTU31106
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 291
                                                                                                                     gene
                                    CDS
                                                                      misc_feature
                                                                                             sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caggatgtgctgactcagccgtcctccgtgtctgggtccctgggccagagggtctccatc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cccgaccgattctccggctccaggtctggggaacacagccaccctgaccatcagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcgggggatc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acctgctctggaagcagcagcaacattggaggtaatgcttatgtggggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGCTGAGGACGAGGCCGATTATTACTGTGCATCTTATGACAGCAGTAGCAGTGGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caggctgaggacgagtcgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCCCAGGATCAGCCCCCAAAGTCCTCATTTATGGTGCAGCCAGTCGAGCCTCGGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCTGCTCTGGAAGCAGTAGCAACGTTGGATATGGTAATTATGTGAGTTGGTTCCAACTC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bos taurus immunoglobulin lambda light chain variable region (Ig
Vila) mRNA, partial cds.
                                                                                                                                                                                                                       Direct Submission
Submitted (07-JUL-1995) Robert Aitken, Microbiology,
Glasgow, Joseph Black Building, Glasgow, G12 8QQ. UK
                                                                                                                                                                                                                                                                                            1 (bases 1 to 393)
Sinclair,M.C., Gilchrist,J. and Aitken,R.
Molecular characterization of bovine V lambda
J. Immunol. 155 (6), 3068-3078 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                    U31106
U31106.1 GI:950176
                                                                                                                                                                                                                                                               Aitken, R.
                                                                                                                                                                                                                                                                                       95403981
                                                                                                                                                                                                                                                                                                                                               Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                 Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             h 79.8%;
Similarity 87.4%;
91; Conservative
                                                                                                                                                                                                                                                                           (bases 1 to 393)
                                                                                                                             /cell_type="lymphocyte"
/tissue_type="spleen"
/dev_stage="adult"
 /function="secreted
/note="from the Vll
                                                         /gene="Ig Vlla"
                                                                                                      /gene="Ig Vlla"
                                                                                                                                                                  /clone="1"
                                                                                                                                                                             /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                               Location/Qualifiers
                        /gene="Ig Vlla"
                                                /note="framework
                                                                                'gene="Ig Vlla"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 265.8;
Pred. No. 1.1e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                region
protein"
family group; similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.1e-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                            regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      333;
                                                                                                                                                                                                                                      University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
 product
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                        of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                      VERSION
KEYWORDS
                                                                                           RESULT
AF172697
 SOURCE
ORGANISM
                                                                                                                                           Вb
                                                                                                                                                               QΥ
                                                                                                                                                                                        밁
                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                       ρy
                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                ACCESSION
                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                           367
                                                                                                                                                                 301
                                                                                                                                                                                          307
                                                                                                                                                                                                               241
                                                                                                                                                                                                                                       247
                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                  127
                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                 67
```

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                             caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                           acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                            CAGGCTGAGGACGAGGCAGAGTATTTCTGTGCATCTTATCAGAATGGTAACACAGCTGTT
                                                                                                                                                                                                                                                                                                             ATCCCAGGATCAGCCCCCAGAACCCTCATCTATGGTGCCACCAGGCGAATCTCGGGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTGCTCTGGAAGCAGCAGCAACGTTGGAACTGGCAATTATGTGAGCTGGTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tch 78.5%; al Similarity 87.5%; 286; Conservative
                                               AF172697
Ovis aries clone 5
(IGLV) mRNA, parti
AF172697
sheep.
                                 AF172697.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Ig Vlla"
/note="complementarity-determining
367...393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="framework region
132 c 101 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="f
337..36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="framework
220. .240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="complementarity-determining
175. 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MSTMAWSPLLLALVTLCTGSWAQAVLTQPSSVSGSLGQRVSITC
SGSSSNVGTGNYVSWFQQIPGSAPRTLIYGATRRISGIPDRFSGSKSGNIATLTISSL
QAEDEAEYFCASYQNGNTAVFGSGTTLTV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           encoded by Bos taurus immunoglobulin G1 light chain gene, GenBank Accession Number x62917 and to product encoded by Bos taurus pseudo-1g-lambda chain V region gen, GenBank Accession Number M21660"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="Ig Vlla"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="Ig Vlla"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="AAA83132.1"
/db_xref="GI:950177"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="immunoglobulin lambda light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="complementarity-determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="Ig Vlla"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="Ig Vlla"
                                 GI:5802441
                                                              lone 58 immunoglobulin partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ig Vlla"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ramework
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 261.4; DB 4;
Pred. No. 1.7e-60;
0; Mismatches 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   region
                                                                           mRNA linear MAM 29-AUG-1999
light chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                          186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                             306
                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                          246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

STAO

aries

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
  ACCESSION
VERSION
KEYWORDS
                                                                                                                                       RESULT
BTU32249
                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                              DEFINITION
                                                                                                                      Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                                                                                                                                                                                                                                                                                          CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAGGTCCCTGGGCCAGAGTGTCTCCATC
                                                                                                                                                                                                                                   TTCGGCAGTGGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                  CAGGCTGAGGACGAGGCCGATTATTACTGTGCATCTGTTGACAGTAGTAGCGGTACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       288;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               White,G.P., Meeuser,E.N.T. and Newton,S.E.
Direct Submission
Submitted (26-JUL-1999) School of Veterinary Science, The Centre
for Animal Biotechnology, The University of Melbourne, Parkville,
Melbourne, Victoria 3052, Australia
Location/Qualifiers
                     region (Vlambdala) mRNA,
U32249
U32249.1 GI:1276598
                                                                 BTU32249 393 bp mRNA linear N
Bos taurus clone 2 immunoglobulin lambda light chain
region (Vlambdala) mRNA, partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bovidae; Caprinae; Ovis.
1 (bases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SGTRLTVLG"
a 95 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/codon_start=1
/product="imminoglobulin light chain variable region"
/protein_id="AAD51687.1"
/db_xref="61:5802442"
/translation="QAVLTQPSSVSRSLGQSVSITCSGSSSNVGIGDYVGWYQQVPGS
/translation="QAVLTQPSSVSRSLGQSVSITCSGSSSNVGIGDYVGWYQQVPGS
/KLLIYGATSRASGVPDRFSASRFGNTATLFINSLQAEDEADYYCASVDSSSGTIFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="58"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="abomasal lymph node"
1. .333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .>333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 261; DB 4;
Pred. No. 2.2e-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                        333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                 MAM 25-APR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sig_peptide
                                              misc_feature
                                                                                                                 misc_feature
                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cow.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (25-JUL-1995) Robert Aitken, Microbiology, Institute of Biomedical and Life Sciences, University of Glasgow, Joseph Black Building, Glasgow Gl2 800, UK
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Jackson, T., Morris, B.A. and Sanders, P.G. Nucleotide sequences and expression of cDNAs anti-testosterone monoclonal IgG1 antibody Mol. Immunol. 29 (5), 667-676 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gene 67 (1), 41-48 (1988)
88329743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sinclair,M.C., Gilchrist,J. and Aitken, Molecular characterization of bovine V J. Immunol. 155 (6), 3068-3078 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aitken, R.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (bases 1 to 393)
Ivanov, V.N., Karginov, V.A., Molecular cloning of a bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95403983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92261635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 393)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 393)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 393)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAC48549.1"
/db_xref="GI:1276599"
/db_xref="GI:1276599"
/translation="MSTMAWSPLLITLYTLCTGSWAQAVLTQPSSVSGYLGQRVSITC
SGSSSNVGSGNVVSWFQQIPGSAPKTLIYDATSRTSGVPDRFSGSRSGNSATLMISSL
QAEDEADYFCASYQTGNTAIFGSGTTLTV"
                                                                                                                                                                                                                                                                                                                          /note="encodes 133. 174
                                                                                                                                                                                                                                                                                                                                                                                                   region"
67. .132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/product="immunoglobulin lambda light chain variable
region"
                                           /note="encodes framework region 337. .366
                                                                                                                                                                                        220.
                                                                                                                                                                                                                                                         /note="encodes complementarity-determining
175. .219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="Vlambdala"
/gene="Vlambdala"
/note="encodes co
                                                                                                                                                                                                                                                                                                                                                /gene="Vlambdala"
/note="encodes framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Vlambda1a"
/note="Vlambda1 family, group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vlambdal family,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cell_type="lymphocyte"
/tissue_type="spleen"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                         /gene="Vlambda1a"
                                                                                                                                       /note="encodes
                                                                                                                                                             /gene="Vlambdala"
                                                                                                                                                                                                                                 /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                  /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="Vlambda1a"
                                                                                                                                                                                                             note="encodes"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone="2"
                                                                                                                                       complementarity-determining
                                                                                                                                                                                                           framework region
complementarity-determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Morozov,I.V. and ne immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              group
                                                                                                                                                                                                                                                                                                                                                                                                                                            lambda light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۵,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     lambda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gorodetsky, S.I.
lambda chain cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  regions
                                                                                                                                                                                                                                                                                                                                                                                                                                               chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a bovine
                                                                                                                                                                                                                                                                               region
region
                                                                                                                                       region
                                                                                                                                                                                                                                                                                                                                                                                                                                               variable
```

Qγ

ω

Ŋ

```
DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 1
BTU32254
                                                      JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                              JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 285; Conserv
                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caggatgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCGGCAGCGGAACCACACTGACCGTC 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ttcggcagcgggaccaggctgaccgtc 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGCTGAGGACGAGGCGGATTATTTCTGTGCATCTTATCAAACTGGTAACACAGCTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cccgaccgattctccggctccaggtctgggaacaccaccctgaccatcagctccgctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgctctggaagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGCTGTGCTGACTCAGCCGTCCCTCCGTGTCCGGGTACCTGGGCCCAGAGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCCCAGGATCAGCCCCCAAAACCCTCATCTATGATGCGACCAGTCGAACCTCGGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTGCTCTGGAAGCAGCAACGTTGGAAGTGGCAATTATGTGAGCTGGTTCCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                      region (V
U32254
U32254.1
             Aitken,R.
Direct Submission
Direct Submission
Submitted (25-JUL-1995) Robert Aitken, Microbiology,
Biomedical and Life Sciences, University of Glasgow,
Building, Glasgow G12 8QQ, UK
                                                                                                               Sinclair,M.C., Gilchrist,J. and Aitken,R. Molecular characterization of bovine V lambda J. Immunol. 155 (6), 3068-3078 (1995) 95403981
                                                                                                                                                                                                 Jackson, T., Morris, B.A. and Sanders, P.G. Nucleotide sequences and expression of cDNAs anti-testosterone monoclonal 1gG1 antibody Mol. Immunol. 29 (5), 667-676 (1992)
                                                                                                                                                                                                                                                                                      Ivanov, V.N., Karginov, V.A., Morozov, I.V. and Gorodetsky, S.I. Molecular cloning of a bovine immunoglobulin lambda chain cDNA Gene 67 (1), 41-48 (1988)
                                                                                                                                                                                                                                                                                                                                             Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea
                                                                                                                                                                                                                                                                                                                                                                                                                                                              BTU32254

Bos taurus clone 8 immunoglobulin lambda light chain region (Vlambdala) mRNA, partial cds.
                                                                                                                                                                                                                                                                                                                                 (bases 1 to 393
                                                                                                                                                                      (bases 1 to 393)
                                                                                                 (bases 1 to 393)
                                                                                                                                                                                                                                                            (bases 1 to 393)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     367. .393
/gene="Vlambdala"
/note="encodes fr
Location/Qualifiers
1. .393
                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:1276608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78.0%;
87.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 259.8; DB 4
Pred. No. 4.6e-60;
0; Mismatches 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                 for
                                                                                                                                           regions
                                                                                                                                                                                                                                a bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MAM 25-APR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                        Institute of 
Joseph Black
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                               Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
BASE COUNT
ORIGIN
                                                           Qy
                                                                                                           Qy
                                                                                                                                         ф
                                                                                                                                                               9
                                                                                                                                                                                                                 Qy
            δ
V
                                     В
                                                                                       В
                                                                                                                                                                                            В
                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sig_peptide
            241
                                     247
                                                               181
                                                                                        187
                                                                                                               121
                                                                                                                                          127
                                                                                                                                                                  61
                                                                                                                                                                                            67
                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                         1 caggatgtgctgactcagccgtcctccgtgtctgggtcccctgggccagagggtctcccatc
                                                                                      caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                     acctgctctggaagcagcagcaacattggaggtaatgcttatgtggggctggtaccaacag
                                                                                                                                          ACCTGCTCTGGAAGCAGCAGCAACGTTGGAGCTACGAATTATGTGAGCTGGTTCCAACAG
                                                                                                                                                                                            CAGGCTGTGCGACTTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAGGGTCTCCATC
                                                                                                                                                                                                                                               285;
                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                           71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                region"
                                                                                                                                                                                                                                                                                                                                                                /gene="Vlambdala"
/note="encodes cor
367..393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="MSTMAWSPLLLTLVTLCTGSWAQAVRLQPSSVSGSLGQRVSITC
SGSSSSNYGATNYVSWFQQIPGSAPRTLLYGATIRASGVPDRFSGSKSGNTATLTISSL
QAEDEADYFCAAYQGGNTGVFGSGTTLIV"
67...>393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="Vlambdala"
/note="encodes fr
220. .240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="encodes complementarity-determining
175. .219
                                                                                                                                                                                                                                                                                                                          /gene="Vlambdala"
/note="encodes fra
131 c 106 c
                                                                                                                                                                                                                                                                                                                                                                                                       /note="encodes 337. .366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="encodes framework 133...174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="immunoglobulin
region"
                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Vlambda1a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vlambdal family, group a"
/product="immunoglobulin lambda light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="AAC48554.1"
/db_xref="GI:1276609"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Vlambda1 family,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Vlambda1a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cell_type="lymphocyte"
/tissue_type="spleen"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="encodes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note-"Vlambdal family,
                                                                                                                                                                                                                                                           78.0%;
87.2%;
                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                             Score 259.8; DB 4
Pred. No. 4.6e-60;
0; Mismatches 42
                                                                                                                                                                                                                                                                                                                          framework region
)6 g 85 t
                                                                                                                                                                                                                                                                                                                                                                             complementarity-determining
                                                                                                                                                                                                                                                                                                                                                                                                                   framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                                        complementarity-determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lambda light chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        region
                                                                                                                                                                                                                                                                        DB 4;
                                                                                                                                                                                                                                                42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ່ພູ
                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain
                                                                                                                                                                                                                                                                          393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     region
                                                                                                                                                                                                                                                                                                                                                                               region
                                                                                                                                                                                                                                                                                                                                                                                                                                                          region
                                                                                                                                                                                                                                                <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             variable
                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>,</u>
              300
                                      306
                                                               240
                                                                                        246
                                                                                                                180
                                                                                                                                                                  120
                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ŋ
                                                                                                                                          186
                                                                                                                                                                                                                                               0
```

```
RESULT 1
AF015797
LOCUS
                                                                      QΨ
                                                                                                  밁
                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
SOURCE
ORGANISM
  Ъ
                      Qy
                                                   밁
                                                                                                                                                    망
                                                                                                                                                                      δÃ
                                                                                                                                                                                                   В
                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
  241
                          241
                                                   181
                                                                           181
                                                                                                   121
                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                307
                                                                                                                                                    61
                                                                                                                                                                           61
                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                    _
 ATCCCAGGATCGGCCCCCAGAACCCTCATCTATGGTGCGACCAGTCGAGCCTCGGGGGTC
                                                                                                             gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc 180
                                                                                                                                                             acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                              caggatgtgctgactcagccgtcctccgtgtctgggtccctgggccagaggggtctccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ttcggcagcgggaccaggctgaccgtc
                                                                                                                                                 ACCTGCTCTGGAAGCAGCAACGTTGGAACTGGCAATTATGTGAGCTGGTTCCAACAG
                                                                                                                                                                                                  CAGGCTGTGCTAACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAGGGTATCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCGGCAGCGGGACCACACTGATCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCTGAGGACGAGGCAGATTATTTCTGTGCGGCTTATCAGGGTGGTAACACAGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted ON N1G 2W1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 330)
Saini.S.S., Jacobs.R. and Kaushik,A.
Structural features of immunoglobulin
chain of BLV-infected cattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF015797
Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (bases 1 to 330)
Saini, S.S., Jacobs, R. and Kaushik, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF015797
AF015797.1
                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2W1, Canada
                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/rodonct="immunoglobulin light chain variable region"
/prodein_id="AAB66568.1"
/protein_id="AAB66568.1"
/db_xref="GI:2323384"
/translation="QAVLTQPSSVSGSLGQRVSITCSGSSSNVGTGNYVSWFQQIPGS
APRTLIYGATSRASGVPDRFSGSRSGNTATLTISSLQAEDEADYFCGYYQSGTTFVCG
                                                                                                                                                                                                                                                                                                                                   SGTTLTVL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Bos taurus"
/db_xref="taxon:9913"
/clone="BLV5H4"
                                                                                                                                                                                                                                                                                                                                                                                                                                    antibody"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (24-JUL-1997) Pathobiology,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330 bp mRNA linear MAM 12-1 immunoglobulin light chain variable region mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:2323383
                                                                                                                                                                                                                                                              78.0%;
86.7%;
                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                  0,;
                                                                                                                                                                                                                                                 Score 259.6; DB 4
Pred. No. 5.3e-60;
0; Mismatches 44
                                                                                                                                                                                                                                                                                                                       92 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ×
                                                                                                                                                                                                                                                                                                                                                                                                                                               mouse heterohybridoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 393
                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                        DB 4;
                                                                                                                                                                                                                                                  44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          variable-region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  University
                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                               secreting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Guelph,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MAM 12-AUG-1997
                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          lambda light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bovoidea;
                                                                                                                                                                         120
                                                                        240
                                                                                                                                                                                                  60
                                                                                                                                                                                                                         60
  300
                                                240
                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Guelph,
                                                                                                                                                                                                                                                 0;
δÃ
                        밁
                                             Ωy
                                                                       В
                                                                                              δÃ
                                                                                                                         Вþ
                                                                                                                                             δÃ
                                                                                                                                                                        밁
                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
```

```
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 1
AF172695
                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                  241
                                                 181
                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                               181
                                                                                                                                              121
                                                                                                                                                                                61
                                                                                                                                                                                                             61
                                                                                                                                                                                                                                        caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                CCCGACCGATTCTCCGGCTCCAGGTCTGGCAGCACAGCGACTCTAACCATCAACTCGCTC
                                                               cccgaccgattctccggctccaggtctgggaacaccaccatcagccatcagctc
                                                                                                                                                                              ACCTGCTCTGGAAGCAGCAAGGACATTGGATATGGTGGCTCTCTGTGGTGGTTGCAACAG
                                                                                                                                                                                             acctgctctggaagcagcaagcattggaggtaatgcttatgtgggctggtaccaacag 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (26-JUL-1999) School of Veterinary Science, for Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 333)
White, G.P., Meeusen, E.N.T. and Newton, S.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bovidae; Caprinae; Ovis.

1 (bases 1 to 333)

White,G.P., Meeusen,E.N.T. and Newton,S.E.

A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sheep
Ovis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ovis aries clone (IGLV) mRNA, part AF172695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF172695.1 GI:5802437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    aries
                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                    SGTRLTVLG"
a 104 c
                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/roddoct="immunoglobulin light chain variable region"
/prodein_id="AanD51685.1"
/protein_id="AanD51685.1"
/db_xref="G1:5802438"
/translation="QAVLTQPSSVSKSLGQSVSITCSGSSKDIGYGGSLWWLQQVPGS
/translation="QAVLTQPSSVSKSLGQSVSITCSGSSKDIGYGASYGSSGSGVFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <1. .>333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="96"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tissue_type="abomasal lymph node"
                                                                                                                                                                                                                                                                                                                         77.9%;
86.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lone 96 immunoglobulin partial cds.
                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                         Score 259.4; DB Pred. No. 6e-60; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                      95
                                                                                                                                                                                                                                                                                                                                                                                                      Ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                      73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA linear MAM 29-AUG light chain variable region
                                                                                                                                                                                                                                                                                                                                       DB 4;
                                                                                                                                                                                                                                                                                                           46;
                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MAM 29-AUG-1999
                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The Centre
Parkville
                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                           60
                                                                                                                                                                                120
                                                                                                                                                                                                                                                                           60
                300
                                                 240
                                                                                                               180
                                                                                                                                              180
                                                                                                                                                                                                                                                                                                         0
```

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
REFERENCE
AUTHORS
TITLE
                                                   В
                                                                               γ
                                                                                                               В
                                                                                                                                    Š
                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
AF172687
 밁
                         Š
                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                            Query Match
Best Local S
Matches 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
 181
                              181
                                                         121
                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                61
                                                                                                                                           61
                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                      Н
                                                                                                                                                                                                   Н
                                                                                                                                                                                    caggalgtgctgactcagccgtcctccgtgtctgggtccctggggccagagggtctccatc 60
               acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                     CAGGCTGTGCTGACTCAGCCGTCCCTCCGTGTCCAGGTCCCTGGGCCAGAGTGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTGCTCTGGAAGCAGCAGCAACGTTGGATATGGTAATTTTGTGAGCTGGTACCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCGGCAGCGGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGCTGAGGACGAGGCCGATTATTACTGTGCATCTTATGGCAGCAGTGGCAGTGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF172687

330 bp mrNA linear MAM 29-AUG-:
Ovis aries clone 146 immunoglobulin light chain variable region
(IGLY) mrNA, partial cds.
AF172687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (26-JUL-1999) School of Veterinary Science, for Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        White, G.P., Meeusen, E.N.T. and Newton, S. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Ruminantia, PeBovidae; Caprinae; Ovis.

1 (bases 1 to 330)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 330)
                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                   65
                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="Aab51677.1"
/protein_id="Aab51677.1"
/protein_id="Aab51677.1"
/db_xref="GI:5802422"
/db_xref="GI:5802422"
/translation="QAVLTQPSSVSRSLGQSVSITCSGSSSNVGYGNFVSWYQQVPGS
APKLLIFEATSRASGVPDRFSGSRSGNTATLTIGSLQAEDEADYYCSSYDSSSFVFGS
                                                                                                                                                                                                                                                                                                                               GTRLTVLG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                 <1. .>330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="146"
                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="abomasal lymph node"
                                                                                                                                                                                                                                             77.48;
88.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GI:5802421
                                                                                                                                                                                                                                                                                                                   101
                                                                                                                                                                                                                                                                                                                  ი
                                                                                                                                                                                                                                           Score 257.
Pred. No.
                                                                                                                                                                                                                                                                                                                  90
                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                      e 257.8; L.
No. 1.6e-59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             333
                                                                                                                                                                                                                                                                                                                  74 t
                                                                                                                                                                                                                                                       Length 330;
                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MAM 29-AUG-1999
                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The Centre
Parkville,
                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bovoidea;
                                                                                  180
                                                                                                                                        120
                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                               120
                           240
                                                       180
240
                                                                                                                                                                                                                               1;
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 1
AF172688
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
                                                                                                                                      δÃ
                                                                                                                                                                                                         Dβ
                                                                                                                                                                                                                                                                                                                       망
                              Š
                                                                                        В
                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                           Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                           121
                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              298
                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                       caggatgtgctgactcagccgtcctccgtgtctgggtccctgggccagagggtctccatc
cccgaccgattctccggctccaggtctgggaacacagccaccctgaccatcagctc
                                                                                                                       gtcccaggatcagcccccagactcctcatcagtgctacaaccgatcgagcctcggggatc
                                                                                                                                                                                                                                           acctgctctggaagcagcagcaacattggaggtaatgcttatgtgggctggtaccaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                                                        GTCCCAGGATCAGCCCCCAAATTCCTCATTTATGGTGCAACCAATCGAGCCTCGGGGGTC
                                                                                                                                                                                                            ACCTGCTCTGGAAGCAGCAGCAACGTTGGATATGGTAATTATGTGACCTGGTACCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCGGCAGCGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCTGAGGACGAGGCCGATTATTACTGTTCATCTTATGACAGCAGT---AGCTTTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           336 bp mRNA linear MAM Ovis aries clone 23 immunoglobulin light chain variable (IGLV) mRNA, partial cds.
AF172688
AF172688.1 GI:5802423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l (bases 1 to 336) White, G.P., Meeusen, E.N.T. and Newton, S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ovis aries
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (26-JUL-1999) School of Veterinary for Animal Blotechnology, The University of Melbourne, Victoria 3052, Australia Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 336) White, G.P., Meeusen, E.N.T. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sheep
                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 87.
94; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    //product="immunoglobulin light chain variable region"
/protein_id="AD51678.1"
/protein_id="AD51678.1"
//db_xref=="GI:5802424"
//translation="QAVLTQPSSVYRSMGQSVSITCSGSSSNVGYGNYVTWYQQVPGS
ARKFLIYGATNRASGVPDRFSGSRPGHTATLTISSLQAEDEADYYCASYDSSTLNGVF
GSGTRLTVLG"
GSGTRLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IGLV"
<1. .>336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /tissue_type="abomasal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77.48;
87.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 257.6; DB 4;
Pred. No. 1.9e-59;
0; Mismatches 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Newton, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lymph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
[13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       / Science,
Melbourne,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      336;
                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       he Centre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bovoidea;
                                 240
                                                                                                                                               180
                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲,
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 1
AF172696
LOCUS
                                                            망
                                                                                δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                           δÃ
                                                                                                                   В
                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
   밁
                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
    118
                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 caggctgaggacgaggccgattattactgtgcatcgtatca---aagtacttacagtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                            61
                                                                                      61
                                                                                                                                                                                          Local Similarity
                                                                                                                      Ļ
                                                                                                                                 1 caggatgtgctgactcagccgtcctccgtgtcttgggtcccttggggccagagggtctccatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCTGAGGACGAGGCCGATTATTACTGTGCGTCTTATGACAGCAGTACTCTTAATGGT
                                                                                                                   CAGGCTGTGCTGACTCAGCCGTCCTCCGAGTCCCGGGTCCCTGGGCCAGAGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCGACCGATTTTCCGGCTCCAGGCCTGGCCACACAGCGACTCTGACCATCAGCTCACTC
                                                                                                                                                                             292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ovis aries
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 330) White, G.P., Meeusen, E.N.T. and Newton, S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF172696 330 bp
Ovis aries clone 53 immunoglobulin
(IGLY) mRNA, partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (26-JUL-1999) School of Veterinary Science, The Centre for Animal Biotechnology, The University of Melbourne, Parkville Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 330) White, G.P., Meeusen, E.N.T. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sheep.
                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                   66
                                                                                                                                                                                                                                                                   മ
                                                                                                                                                                                                                                                                                   GTRLTVLG"
                                                                                                                                                                                                                                                                                            /gene="IGLY"
/codon_start=1
/codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="Anab1686.1"
/protein_id="Anab1686.1"
/protein_id="Anab1686.1"
/db_xref="q1:5802440"
/translation="QAVLTQPSSESGSLGQRVSITCSGSSSNIGRGYGNWYQQVPGSA
/translation="QAVLTQPSSESGSLGQRVSITCSGSSSNIGRGYGNWYQQVPGSA
PKILIYIATIRASGVPDRFSGSRSGNTATLTISSLQAEDEADYYCASYDGNSYGIFGS
                                                                                                                                                                                                                                                                                                                                                                                                     /gene="IGLV"
<1. .>330
                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="abomasal lymph node"
1. .330
                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:5802439
                                                                                                                                                                                          76.9%;
87.7%;
                                                                                                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                   a
                                                                                                                                                                             0;
                                                                                                                                                                                          Score 256.2; DB 4;
Pred. No. 4.5e-59;
                                                                                                                                                                                                                                                                   90
                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Newton, S
                                                                                                                                                                                                                                                                   73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
light
                                                                                                                                                                                                                                                                   4
                                                                                                                                                                             38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chain variable
                                                                                                                                                                                                        Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MAM
                                                                                                                                                                             ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-AUG-1999
                                                                                                                                                                           Gaps
                                                                                                                   60
                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                             ۲:
```

```
밁
             õ
                              밁
                                            ΩV
                                                              밁
                                                                            δÃ
                                                             298 TTCGGCAGCGGGACCAGGCTGACCGTCCTGGGT 330
                301
                                238
                                              241
                                                                               181
                             caggctgaggacgaggccgattattactgtgcatcgtatcaaagtacttacagtggtgtt 300
         ttcggcagcgggaccaggctgaccgtcctgggt 333
                                                              237
                                                                             240
```

Search completed: August 11, 2002, 22:03:49 Job time: 8214 sec

THIS PAGE BLANK (USPTO)

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run
                                                                                                                                                                                   Result
                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                         o
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
  8
10
11
12
12
13
14
15
16
                                                                                                                                                                                                                       score greater 1
and is derived
                                                                                                                                                                                                                                          Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB DB
 244.6
242.2
241.2
241.4
239.6
235.4
235.4
233.4
233.4
233.4
233.4
233.4
233.6
231.8
230.8
                                                                                                                                                       246.2
                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
                                                                                                                                                                         Match
                                                                                                                                                                                                                      is the number of results predicted by chance to have a ster than or equal to the score of the result being printed, ived by analysis of the total score distribution.
                                                                                                                                                                                   Query
                                                                                                                                                                                                                                                              10:
11:
12:
12:
13:
14:
15:
 EST: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13736207 seqs, 6748477542 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-786-015-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            August 11, 2002, 19:45:49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caggtgcagctgcaggagtc.....tcctactcaccgtctcctca
                                                                                                                                                                                                                                                                                                          em_htc:*
gb_est1:*
gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                                                                                                                       em_estmu:*
em_estov:*
em_estp1:*
                                                                                                                                                                                                                                                                                                                                                                                                       em_estba:*
                                                                                                                                                                                                                                                                                                                                                                                     em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                               em_esthum:*
                                                                                                                                                                                                                                                                                                                                               em_estro:*
                                                                                                                                                                                                                                                                   em_gss_inv:*
em_gss_pln:*
                                                                                                                                                                                                                                                                                       gb_gss:*
em_gss_hum:*
                                                                                                                                                                                                                                                            em_gss_vrt:*
                                                                                                                                                                         Length
                            489
509
509
509
504
456
492
517
517
498
                                                                                                                                                                         В
  AV667743

BE487301

BE589545

BE481532

BG692159

BE646118

BE446118

BE482028

BE476121

BE482028

BE476121

BE482204

BE589492

BE789492

BE789492

BE789494

BE692944

BE6929446
                                                                                                                                   BE480721
BE487664
                                                                                                                                                                         Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                   summaries
                                                                                                                                                      BE476735
                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Search time 2546.98 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (without alignments)
1923.609 Million cell updates/sec
         BE476735 160120 BA
BE480721 165931 BA
BE480764 176725 BA
AV667743 AV667743
BE487301 175972 BA
BE589545 195790 BA
BE589545 195790 BA
BE648132 167023 BA
BE6481532 167023 BA
BE6481532 167023 BA
BE6481532 167023 BA
BE6481532 167029 BA
BE6482028 167666 BA
BE476121 158709 BA
BE482206 167909 BA
BE482206 167909 BA
BE478595 162919 BA
BE678595 162919 BA
BE678595 162919 BA
                                                                                                                                                                       Description
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
22.	22.	22	23	23.		23.	23.	23.	23.	24.	24.	24.	24.	25.	25.	26.	26.	26.	N		N		N	29.	29.	230.2	30.
1.	۳	۳	۲.	۲.	۲	۲	۳	۲	_	۲.	۲.	۲	۲.	2	2	2		2	2		2	2	ω	Ψ	ω	63.4	ω ·
1	9	\mathbf{r}	9	S	\mathbf{L}	9	9	0	7	8	7	4	0	\vdash	9	0	7	9	598	0	9	4	\mathbf{L}	514	4	500	0
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	8008	8979	8600	8038	234	8485	8231	8521	9280	8853	9002	4575	8264	9011	9283	8590	8220	E48732	E58	E48591	F23075	G69246	E48141	E48029	E48565	.BG689490	E84578
E483381 16	E480083 16	9795 19	E486006 17	E480384 16	E482341 16	E484853 17	82316 16	5219 17	92805 34	88530 19	90022 19	5758 23	2642 16	0115 33	2835 34	5907 17	2203 16	7323 17	1.5	5914 17	F230754 25	G692467 34	E481411 16	80296 16	E485653 17	ω	E845785 23
9533	5031	6341	3340	5449	8089	1651	8057	2170	2631	3837	6806	2868	8491	8540	2677	3199	7903	6001	4071	3210	2610	2167	6849	5337	2779	7581	2825
BA	BA	BA	BA	8A	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	8A	8A	BA	BA	BA	9A	9A	9A	9A	BA	Ā

ALIGNMENTS

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
BE476735
LOCUS
                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                              source
                                                                                                                                                                                                                                                                                                                              Unpublished (2000)
Contact: Sonstegard TS
COSDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE476735 489
160120 BARC 5BOV Bos taurus
BE476735
BE476735.1 GI:9596268
EST.
                                                                                                                                                   FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 28 row: J column: 21
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                     Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases v
0.980904 e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COW.
                                                                                                                                                                                                                               PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                Mapping of Expressed Sequence Tags from a normalized gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sonstegard, T.S., Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 489)
                                                                                                                                                                                                                                                     -minmatch 12 options.
                                                      /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                  Location/Qualifiers
/note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        489 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9 bp mRNA linear
cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                         called and alt_trimmed with phred
d by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bovine mammary
                                                                                                                                                                                                                                                                         18
```

```
RESULT
BE480721
LOCUS
                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
FEATURES
                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 297
                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                                                                                                                                                                       439
                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               tca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ccaggaaaggcgcttgagtggctaggtggtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGTGCAGCTGCGGGAGTCGGGCCCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCCTC 141
                                                                                                                                                                                                                                                                                                                                                                                                                                       TCA 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGGAAAGGCGCTGGAGTGGCTCGGTGTCATAAAGAGTGGTGGAAGCACAGGCTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTGCACGGTCTCTGGATTCTCATTAAGCGATAATAGTGTAAACTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                         BE480721
BE480721.1
EST.
                                                                                                                                                                                                                                   Bos taurus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pec Bovidae; Bos.

1 (bases 1 to 509)

1 (bases 1 to 509)
                                                                                                                    USDA, ARS, Beltsville Agricultural Research Center Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA Tel: 301 504 8416 Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                          BE480721 509 bp ml 165931 BARC 5BOV Bos taurus cDNA 5',
       BACKWARD: GTTTTCCCAGTCACGACG
Plate: 17 row: L column: 19
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                      Unpublished (2000)
Contact: Sonstegard TS
                                               FORWARD: AGGAAACAGCTATGACCAT
                                                          PCR PRimers
                                                                       and -minmatch 12 options.
                                                                                 Single pass sequencing. Bases c
v0.980904.e. Vector identified
                                                                                                                                                                                                            Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                               363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                cDNA library
                                                                                         tads@lpsi.barc.usda.gov
pass sequencing. Bases called and alt_trimmed with phred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."
                                                                                                                                                                                                                                                                                                                                       GI:9600254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             150 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67.8%;
81.8%;
                                                                                                                                                                                                                                   Capuco, A.V., Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   core 246.2;
red. No. 3.4e
Mismatches
                                                                                                                                                                                                           Tags from
                                                                                 bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               104 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .4e-57;
                                                                                  cross_match with the
                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                            mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                           D
                                                                                                                                                                                                            normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                        ta; Euteleostomi;
Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             489;
                                                                                                                                                                                                                                                                                                                                                                          EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                            bovine
                                                                                    -minscore
                                                                                                                                                                                                                                                                                                                                                                          28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                        Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201
                                                                                                                                                                                                            mammary
                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲
                                                                                    18
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
BE487664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tcctca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acagecetacagteeegacteagegteaceagggacaceteeaagageeaatteteeetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTGATGGTTATTCTTGTAATTTCCTGTTGGACTGGGGCCAAGGACTCCTGGCCACCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGGCCCTGAAATCGCGGCTCATCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGGAAAGGCGCTAGAATGGCTCGGTGTCATACATAGTGGTGGAAACACAGACTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCTGCACGGTCTCTGGATTCTCATTAAGCGAGCATAATGTAGGCTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE487664
176725 BARC 5
BE487664
BE487664.1 C
                                                                           gland cDNA library
Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
Single pass sequencing. Bases called and alt_trimmed v0.980904.e. Vector identified by cross_match with the value of the 
                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 5)
Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute. Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COW.
                                                                                                                                                                                                                                                             Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus
                                                   Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                              Wells,K.D.
                                                                                                                                                                                                                                                                                                                                                                       Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_1ib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."

a 154 c 130 g 115 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:9607197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5BOV Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67.8%;
81.4%;
                                                                                                                                                                                                                                                                                                                                              509)
                                                                                                                                                                                                                                                                                                                   Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 246; DB 1
Pred. No. 4e-57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9 bp mRNA linear cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                             Tags
                                                                                                                                                                                                                                                                                                                   Van Tassell, C.P.,
                                                                                                                                                                                                                                                                   from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65;
                                                                                                                                                                                                                                                                a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                   Ashwell, M.S.
     the
                                                                                                                                                                                                                                                                                                                                                                                                                       Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
with phred
he -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      u
ٻ
                                                                                                                                                                                                                                                                   bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                               Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                   and
     18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
```

```
RESULT
AV667743
LOCUS
                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                REFERENCE
                                                                                                                                         KEYWORDS
                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                        VERSION
                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 289
                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                          433
                                                                                                                                                                                                                                                                                                                                                                                                                                   253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133
                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                            373
                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                               313
                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctcccctc
                                                                                                                                                                                                                                                                                                  tca
                                                                                                                                                                                                                                                                                                                                                                                                                                TCA
                                                                                                                                                                                                                                                                                                                            GTAGTTGGTTATGCTGGTAACGTCGATGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCC
                                                                                                                                                                                                                                                                                                                                           TCAGTGAGCCTCGTGACAACTGAGGACACGGCCACATACTATTGTGCGAAGACCTATAGT
                                                                                                                                                                                                                                                                                                                                                                                              tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGGAAAGGCGCTGGAGTGGGTAGTGCAGATAATGATGGATACACAAGGTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGTGCAGCTGCGGGAGTCGGGCCCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTGCACGGTCTCTGGATTCTCATTGACTAAGTATGCTGTAATCTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and -minmatch 12 options.

PCR PRIMER'S
FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 137 row: A column: 22
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                      AV667743 Bos taurus
AV667743 Bos taurus
5', mRNA sequence.
AV667743 GI:993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289;
                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pec Bovidae; Bovinae; Bos.
         Establishment of a high throughput EST sequencing system poly(A) tail-removed cDNA libraries and determination of
                                                 Takasuga, A., Hirotsune, S.,
                                                                                                                 Bos taurus
poly(A) tail-removed
bovine ESTs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                          435
                                                                                                                                                                                                                                                                                                    363
                                                            (bases 1 to 555)
                                    Sugimoto, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lb="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                            Bos taurus ovary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note-"Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

161 c 131 g 111 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                       GI:9932488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67.48;
79.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 244.6; DB:
Pred. No. 9.6e-57
0; Mismatches 7:
                                                                                                                                                                                               fetus
                                                 Itoh, R.,
                                                                                                                                                                                                          þ
                                                                                                                                                                                               Bos
                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10;
                                               Jitohzono, A.,
                                                                                                                                                                                               taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             74;
                                                                                                                                                                                               cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                       Pecora;
                                               Suzuki,H.,
                                                                                                   Euteleostomi;
                                                                                                                                                                                                          EST 28-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                               E10V017E06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and disease
          36,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                       Bovoidea;
                                                                                                                                                                                                                                                                                                                            432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                               372
                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
REFERENCE
AUTHORS
                                                                                                             ACCESSION
                                                                                                                                                 RESULT
BE487301
                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                             γQ
                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                     KEYWORDS
                                                                                                                                      Locus
                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                    450
                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                    390
                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                     270
                                                                                                                                                                                                                                                                                                                                                                                                       210
                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                               U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                               ggtgacagtgttccttatggt-----ttggactactggagcccaggactcctactcacc
                                                                                                                                                                                                                                                                                                                                                     CCAGCCCTGAAATCCCGGCTCAGCATCACCAAGGACAACTCTAAGAGCCAAGTCTCTCTG
                                                                                                                                                                                                                                                                                                                                                                  acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                       CCAGGGAAGGCGCTGGAGTGTCTTGGTGGAATAGGCGGACGTGGAAACACAGGCTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                    ccaggaaaggcgcttgagtggctaggtggtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                    GTCTCCTNA
                                                                                                                                                                                                                          gtctcctca
                                                                                                                                                                                                                                                   GATGGTGGTATTTATCATTGTGAAAACATCGATGCCTGGGGCCCAAGGACTCCTGGTCACC
                                                                                                                                                                                                                                                                                                     TCACTGAGCAGCGTGACAACTGAGGACACGGCCACATACTACTGTGTGAAAGGGATGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGGTGTAGGCTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297;
                                                                       BE487301
175972 BARC
BE487301
BE487301.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: kazusugi@cocoa.ocn.ne.
Single pass sequencing.
This clone was obtained from
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Odakura, Nishigo, N
Tel: 81-248-25-5641
Fax: 81-248-25-5725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nucleic Acids Res. 29 (22),
21570554
Contact: Yoshikazu Sugimoto
1 (bases 1 to 504)
Sonstegard, T.S., Ca
                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Animal Genetics Division
Shirakawa Institute of Animal
                                                             Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                    458
                                                                                                                                                                                                                          363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="Bos taurus
/tissue_type="ovary"
/dev_stage="fetus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Vector: pZL1; Site_1: was deleted from a Not1 site"
173 c 148 g 119 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Bos taurus"
/db_xref="taxon:9913"
/clone="E10V017E06"
                                                                                                   GI:9606834
                                                                                                                        5BOV Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66.7%;
Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nishi-shirakawa,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                      504 bp
                                                                                                                         CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242;
No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genetics
Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polyA-deleted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ovary
                                                                                                                         ٠,
د
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 9;
                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fukushima
                                                                                                                         mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sall;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fetus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                961-8061, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA
 Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    library.
                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Not1;
                                                                                                                                      EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                     Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Poly
                                                                                                                                                                                                                                                    449
                                                                                                                                                                                                                                                                            354
                                                                                                                                                                                                                                                                                                     389
                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                       269
                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                       209
 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
```

SOURCE

```
RESULT
BE589545
                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                 γΩ
  VERSION
KEYWORDS
                                   LOCUS
DEFINITION
                                                                                                                              δõ
                                                                                                                                                          밁
                                                                                                                                                                                 õ
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                            망
                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                            440
                                                                                                                                  361
                                                                                                                                                           380
                                                                                                                                                                                  301
                                                                                                                                                                                                           320
                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                          260
                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                          200
                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                            140
                                                                                                                                                                                                                                                                                                                                                                                                            08
                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                          tca 363
                                                                                                                                                                                                                                                         ACCTGCACGATCTCTGGATTCTCATTGACCACCTATGCTGTAATCTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                      acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                            TCA
                                                                                                                                                                                                                                                                                                          CCAGGGAAGGCTCTGGAGTGGCTTGGTAGTAGACAGTAGTGGGAACACAGACTATGCC
                                                                                                                                                                                                           TCAGTGAGCAGCGTGACACCTGAGGACACGGCCACATACTACTGTGCGAAGCAATATAAT
                                                                                                                                                                                                                       tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
BE589545
195790 BARC 5BOV BOS t
BE589545
BE589545.1 GI:9842584
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2000)
Contact: Sonstegard TS
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wells, K.D.
Mapping of Express
gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and -minmato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscorr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FORWARD: AGGADACAGCTATGACGAT
BACKWARD: GTTTTCCCAGTCAGGACG
Plate: 123 row: J column: 18
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                            442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vector: pCNV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  location/Qualifiers
             GI:9842584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 163 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    66.5%;
                                   taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 241.4; DB 10;
Pred. No. 7.2e-56;
0; Mismatches 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              128 g
                                                505
                                   5 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 104 t
                                   mRNA
5', mRN
                                    mRNA
                                    sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -minscore
                                                28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                           199
                                                                                                                                                                                                           379
                                                                                                                                                                                                                                                          319
                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                          259
                                                                                                                                                                                  360
                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
밁
                    Qy
                                                         밁
                                                                                     Qy
                                                                                                                       뫄
                                                                                                                                               οy
                                                                                                                                                                                    밁
                                                                                                                                                                                                               ΩV
                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                             뭥
                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Sim
Matches 294;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                              140
440
                            358
                                                           380
                                                                                        301
                                                                                                                       320
                                                                                                                                                    241
                                                                                                                                                                                    260
                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                 200
                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                          08
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                          1 caggtgcagctgcaggagtcggggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                                                                                           acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                 acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                   ccaggaaaggcgcttgagtggctaggtggtgtccagtggtgcactaacagcctataac
                           tcctca
                                                        tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                    CCAGCCCTAAAATCCCGGCTCAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTG
                                                                                                                                                                                                                                                 CCGGGGAAGGCGCTGGAGTGGATTGGTAGTATAAGTGTTGGTAGAAGCACATACTATAAC
                                                                                                                                                                                                                                                                                                             ACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGTTGTAGACTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                          CAGGTGCAGCTGCGGGAGTCAGGCCCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCTC
                                                                                                                       TCAGTGAGCAGCGTGACACCTGAGGACACGGCCACATACTACTGTGCAAAGGGTTATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (2007)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
USDA, Or Poltsville, MD 20705, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cow.

Bos taurus

Bos taurus

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutel

Bukaryota; Eutheria; Cetartiodactyla; Ruminantia; Pecora;

Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bdlg. 200 Rm 2A, Beltsville,
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sonstegard, T.S., Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: AGGADACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 122 row: F column: 3
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111
445
                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                           363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Yector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and diserstates."

149 c 138 g 107 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                      66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 505)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                    239.6; DB 1
No. 2.3e-55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from a
                                                                                                                                                                                                                                                                                                                                                                                                                                       69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
··
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovoidea;
                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                     300
                                                                                                                                                                                    319
                                                                                                                                                                                                                                                                                                                199
                                                                                          357
                                                                                                                        379
                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                                                                                                                                                                                                                       1,
```

```
BASE COUNT
ORIGIN
                                                                   δÃ
                                                                                                      밁
                                                                                                                                 QΥ
                                                                                                                                                              밁
                                                                                                                                                                                         Ş
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
BE481532
LOCUS
DEFINITION
ACCESSION
              õ
                                            밁
                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 268; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                       260
                                                                                                                                    181
                                                                                                                                                                  200
                                                                                                                                                                                              121
                                                                                                                                                                                                                               140
               301
                                             320
                                                                         241
                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                         98
                                                                                                                                                                                                                                                                                    acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                CCAGGGAAGGCGCTGGAGTGCCTCGGTAGTATAACCAATGGTGGAAAAACAGGCTATAAC
ggtgacagtgttccttatggt 321
                                                                                                      CCAGCCCTGAAATCCCGGCTCAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTG
                                            TCAGTGAGCAGCGTGACACCTGAGGACACGGCCACATACTACTGTGGAAAAAGTACTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE481532
456 bp mRNA linear
167023 BARC 5BOV Bos taurus cDNA 5', mRNA sequence.
BE481532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTCCCAGTCAGGACG
Plate: 20 row: J column: 7
Seg primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mapping of Expressed Sequence Tags from a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bovidae; Bovinae; Bos. 1 (bases 1 to 456)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE481532.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRimers
                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:9601065
                                                                                                                                                                                                                                                                                                                                                                                                                                             129 c
                                                                                                                                                                                                                                                                                                                                                                  65.1%;
                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                Score 236.2; DB 10
Pred. No. 1.8e-54;
0; Mismatches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                          125 g
                                                                                                                                                                                                                                                                                                                                                                                                                                             101 t
                                                                                                                                                                                                                                                                                                                                                                                DB 10;
                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                 456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                                                                                                                                                                                                                                                   0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                        300
                                                                                                                                                              259
                                                                                                      319
                                                                                                                                 240
                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                   0;
```

```
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
BG692159
LOCUS
밁
                      οy
                                                B
                                                                         δÃ
                                                                                                      망
                                                                                                                          δÃ
                                                                                                                                                         밁
                                                                                                                                                                                ρ
                                                                                                                                                                                                             В
                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              380
325
                        241
                                                205
                                                                                                                                121
                                                                                                                                                          145
                                                                           181
                                                                                                                                                                                  61
                                                                                                                                                                                                               85
                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                           1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                  acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                             CAGGTGCAGCTGCGGGAGTCAGGCCCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCTC
TCAGTGAGCAGCGTGACACCTGAGGACACGGCCACATACTACTGTGCAAGGCTATATACT
             | tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                    CCGGGGAAGGCGCTGGAGTGGGTTGGTGGTGCACAGTGATGGAACGACAAGCTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTGGTAGTTATGATTATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BG692159
341738 BARC
BG692159
BG692159.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BACKWARD: GTTTTCCCAGTCACGACG
Plate: 41 row: F column: 19
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases
v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bdlg. 200 Rm 2A, Beltsville, Tel: 301 504 8416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wells, K.D.
Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USDA, ARS, Beltsville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -minmatch 12 options.
                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BARC
                                                                                                                                                                                                                                                                                                                                                മ
                                                                                                                                                                                                                                                                                                                                              /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and diserstates."

a 152 c 134 g 104 t
                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SBOV
                                                                                                                                                                                                                                                                             64.8%;
80.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus cDNA 5',
                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                             Score 235.4; DB 1
Pred. No. 3.2e-54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Agricultural Research sville, MD 20705, USA
                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   called d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    led and alt_trimmed with
cross_match with the -mi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from
                                                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
                                                                                                                                                                                                                                                                  66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      normalized
                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ashwell, M.S. and
                                                                                                                                                                                                                                                                                            492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST 02-MAY-2001
                                                                                                                                                                                                                                                                6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -minscore
                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                phred
384
                       300
                                                 324
                                                                           240
                                                                                                                              180
                                                                                                      264
                                                                                                                                                          204
                                                                                                                                                                                                                                                                                                                                                                         disease
                                                                                                                                                                                                                                                                ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18
```

```
RESULT
BE846118
                          Qy
                                                          망
                                                                                 Q
                                                                                                                   В
                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
   밁
                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FOCUS
                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                      source
   199
                             121
                                                            139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                         61
                                                                                                                      79
                                                                                                                  acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac
                                                       ACCTGCACGGTCTCTGGATTCTCATTGAGCGACTATGCTGTAGGCTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTTATAATTATAATTATGG--
CCGGGGAAGGCGCTGGAGTGGGTGGTGGTGCACAGTGATGGAACGACAAGCTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCA 441
                                                                                                                                                                                291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mapping of Expressed Sequence Tags from a nc gland cDNA library Unpublished (2000) Contact: Sonstegard TS USDA, ARS, Beltsville Agricultural Research Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA Tel: 301 504 8416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE846118 583
232255 BARC 5BOV Bos taurus
BE846118
BE846118.1 GI:10282942
                                                                                                                                                                                                                                                                                                                                                                                                                                             FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTCCCAGTACGACG
Plate: 112 row: P column: 20
Seg primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and -minmatch 12 options. PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Single pass sequencing. Bases called and v0.980904.e. Vector identified by cross_m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovidae; Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mammalia; Eutheria;
                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 583)
                                                                                                                                                                                                                                                                      117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 504 8416
301 504 8414
                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                              /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tisue_type="pooled"
/lab_host="PHIDB"
/note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disease
states."
                                                                                                                                                                                                                                                                      മ
                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                            64.8%;
                                                                                                                                                                                                                                                                      186 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                              Score 235.4; Pred. No. 3.4e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----AGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCC
                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   583
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 bp mRNA linear
cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tags from a normalized
                                                                                                                                                                                                                                                                      119
                                                                                                                                                                              B 10;
3.4e-54;
nes 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  led and alt_trimmed with phred
cross_match with the -minscore
                                                                                                                                                                                Indels
                                                                                                                                                                                                          Length
                                                                                                                                                                                                           583;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST
                                                                                                                                                                              6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-SEP-2000
                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
258
                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18
                                                                                                                                                                              <u>_</u>
```

```
RESULT 10
BE485461
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
밁
                       Š
                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               덩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                     Matches
                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            259
78
                                                                Local Similarity
            1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctcccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGTGCAGCTGCGGGAGTCGGGGCCCCAGCCTGGTGAAGCCCTCACAGACCCTGTCCCTC 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTTATAATTATAGG-----AGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc 360
                                                     289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE485461
172501 BARC
BE485461
                                                                                                                                                                                                                                                                                                                                                                                                                     USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE485461.1 GI:9604994 EST.
                                                                                                                                                                                                                                                                                               BACKWARD: GTTTTCCCAGTCACGACG Plate: 133 row: J column: 4 Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                  PCR PRimers
FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (2000)
Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 496)
Sonstegard, T.S., Ca
Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota;
Mammalia; !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cow.
Bos taurus
                                                                                                                                                                                                                                                                                                                                                                              Single pass sequencing. Bases (v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mapping of Expressed Sequence gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                         Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bovidae; Bovinae; Bos.
                                                                                                                                     108
                                                                                                                                                                                                                                                                                                                                                                 -minmatch 12 options.
                                                     Conservative
                                                                                                                                                                                                  /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                   tissues at eight physiological, states."
a 151 c 138 g 99 t
                                                                                                                                                                          /note-"Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5BOV Bos taurus
                                                                64.3%;
79.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Capuco, A.V.,
                                                  Pred. No. 1.1e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6 bp mRNA
cDNA 5', mRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Van Tassell, C.P.,
                                              3.4;
.. 1.1e-53;
71;
                                                                                                                                                                                                                                                                                                                                                                                           called and
                                                                                                                                                                                                                                                                                                                                                                              þу
                                                                                                                                                                                                                                                                                                                                                                              led and alt_trimmed with phred
cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a normalized
                                                                                                                                                             developmental,
                                                    Indels
                                                                             Length 496;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                    ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-AUG-2000
                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            318
                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                               disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mammary
                                                    1;
                                                                                                                                                                                                                                                                                                                                                                               18
```

δã

61 acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 1
BE482028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Locus
 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGCCCTGAAATCCCCGACTCAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGGAAAGGCGCTGGAGTGGCTCAGTGCCATTAAGGCTGGTGGAAACACAGAGTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccaggaaaggcgcttgagtggctaggttgtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCA 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGTGGATCGGTAATGAGGACAT----CGCCTGGGGCCCAGGGACTCCTGGTCACCGTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ggtgacagtgttccttatggtttggactactggagcccagggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCACTGAGCAGCGTGACTACTGAAGACACGGCCACATACTACTGTGGAAAGGATGTTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USDA, ARS, Beltsville Agricultural Research
Bddg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE482028
167666 BARC 5BOV BOS
BE482028
BE482028.1 GI:960156
                                                                                                                                                                                                            BACKWARD: GTTTTCCCAGTCACGACG
Plate: 22 row: E column: 2
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                         Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore
and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                          Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                      Mapping of Expressed Sequence
gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sonstegard, T.S., Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bos taurus
                                                                                                                                                                                                                                                   FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 517)
                                                                                                                                                                                                                                                                PRimers
                                                               115
                                                               Ω
                                                              /note-"Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

a 171 c 120 g 111 t
                                                                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                        /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:9601561
 64.38;
77.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                taurus
 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA
233.4; DB 10;
No. 1.1e-53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ģ
                                                                                                                                                                                                                                                                                                                                                                                                                Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                       Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA linear
5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                                                                                                                                                                a normalized
            Length
                                                                                                                                                                                                                                                                                                                                                                 Center
                                                                                                                                                                                                                                                                                                                                                                                                                                         Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                                                                                                                                                                                                                                 bovine
                                                                                                                                                                                                                                                                                        -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          197
                                                                                      disease
                                                                                                                                                                                                                                                                                                                                                                                                                 mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                        18
                                                                                                                                                                                                                                                                                      JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 1
BE476121
LOCUS
                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    438 TCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tca
                                                                                                                                                                                                                                                                                                                                                                                                                                    BE476121
158709 BARC !
BE476121
BE476121.1 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       282;
                                                                                                                        Seq
                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                            COM
                                                                                                                                                                         PCR PRimers
                                                                                                                                                                                                                                                                                                   Unpublished (2000
                                                                                                                                                                                                                                                                                                                                       Wells,K.D.
                                                                                                                                                                                                                                                                                                                                                  Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            363
                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 518)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                   1. .518
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:9595654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             580V
```

```
caggtgcagctgcaggagtcggggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGCCCTGAAATCCCGAATCACCATCACCAAGGACCAAGTCTCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGGGAAGTCTCTGGAGTGGCTTGGTGATATAAACATTCGTGGAACCACAGACTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATATGGATTCACATATGACATCGAGTCCTGGGGCCGAGGACTTCTGGTCACCGTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCCTGAGCACCGTGACACCTGAGGACACGGCCACATACTACTGTACAAAATCCGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                  Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases
v0.980904.e. Vector identified
and _minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                     FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 26 row: G column: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mapping of Expressed Sequence gland cDNA library
                                                                                                                                                                              primer: ATTTAGGTGACACTATAG
    Location/Qualifiers
/tissue_type="pooled"
/lab host="DH10B"
/lab host="DH10B"
/note="Vector: pcMV SPORT6; Site_1: XbaI; Site_2: XhoI;
/ibtrary made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disease
                                                                                                  /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ģ
                                                                                                                                                                                                                                                                                                                  called d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5', mRNA sequence
                                                                                                                                                                                                                                                                                                                      led and alt_trimmed with phred
cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                           Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                        -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                        18
```

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 1
BE482206
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                         AUTHORS
                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaaccctctccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ccaggaaaggcgcttgagtggctaggtgtgtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGTGCAGCTGCGCGAGTCGGGGCCCCAGCCTGAAGCCCTCACAGACCCTCTCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGGTGGTGGCGATAGTGGT 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ggtgacagtgttccttatggt 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGGGAAGGCGCTGGAGTGCCTCGGTGGTATACACAGTGGTGGAAGCACAGGCTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGCTGTAAGCTGGATCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266;
                                                                                                                                        Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore
and -minmatch 12 options.
                                                                                                                                                                                              Contact: Sonstegard TS USDA, ARS, Beltsville Agricultural Research Bd1g. 200 Rm 2A, Beltsville, MD 20705, USA Tel: 301 504 8416 Fax: 301 504 8414
                                                                                   FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 22 row: 0 column: 5
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                               Sonstegard, T.S., Capuco, A.V., Wells, K.D.
Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                          EST
                                                                                                                                                                                                                                                                                                                                                                                                                    BE482206
                                                                                                                                                                                                                                                                                                                                                                                                                             BE482206 476
167909 BARC 5BOV Bos taurus
                                                                                                                                     PCR PRimers
                                                                                                                                                                                                                                                          Unpublished (2000)
                                                                                                                                                                                                                                                                                                                              Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                      Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                        BE482206.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                    (bases 1 to 476)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                      cDNA library
/organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  states."
a 150 c
                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                         GI:9601739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64.2%;
82.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 233; DB Pred. No. 1.5e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  149
                                                                                                                                                                                                                                                                                                                                                                                                                                           476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ø
                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                        dq
                                                                                                                                                                                                                                                                                Tags
                                                                                                                                                                                                                                                                                                        Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110
                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA linear
5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 10;
1.5e-53;
nes 55;
                                                                                                                                                                                                                                                                                                        Tassell,C
                                                                                                                                                                                                                                                                                from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                       .p.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                  Center
                                                                                                                                                                                                                                                                                                        Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                          EST
                                                                                                                                                                                                                                                                                bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                          28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                            Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156
                                                                                                                                                                                                                                                                                mammary
                                                                                                                                                            18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
RESULT 14
BE589492
LOCUS
                                                                                                                                                                                                                                                                                                         DEFINITION ACCESSION
                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 305
                                                                                                                                                                                 TITLE
                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                       373 CTCCTGGTCACCGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                            343
                                                                                                                                                                                                                                                                                                                                                                                                                                   313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctcctactcaccgtctcctca
                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----tctgtcaatggtgacagtgttccttatggtt---tggactactggagcccagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ccaggaaaggcgcttgagtggctaggtgtgtgtccagtggtgcactaaccagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGGTTATGGTTGGTAGCGGTGCTGATTATGATTACGTCGATGCCTGGGGCCAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGCCCTGAAATCCCGGCTCAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGGGAAGGCGCTGGAGTGTCTTGGTGGTATAAGTAATGGTGGAAGCACAGCCTATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        305;
                                                                                                                                                                                                                                                                                              BE589492
195687 BARC !
BE589492
BE589492.1 (
                                                                 Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases v0.980904.e. Vector identified
                                                                                                               Tel:
                                                                                                                        Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
         Plate: 122
                     BACKWARD: GTTTTCCCAGTCACGACG
                                           PCR PRimers
                                                                                                                                                          gland cDNA library
Unpublished (2000)
                                                                                                                                                                                Mapping of Expressed
                                                                                                                                                                                             Wells,K.D.
                                                                                                                                                                                                     1 (bases 1 to 488)
Sonstegard, T.S., Capuco, A.V.,
                                                                                                                                                                                                                            Bovidae; Bovinae;
                                                                                                                                                                                                                                      Eukaryota;
Mammalia; F
                                                                                                                                                                                                                                                              Bos taurus
                                                                                                                                                                                                                                                                                    EST
                                  FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                        -minmatch 12
                                                                                                  301 504 8416
301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates:"
                                                                                                                                                                                                                                      ; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
row: A column: 21
ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                    488
5BOV Bos taurus c
                                                                                                                                                                                                                                                                                              GI:9842531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64.0%;
                                                        options.
                                                                                                                                                                                                                            Bos.
                                                                                                                                                                                                                                                                                                                                                                                       393
                                                                                                                                                                                                                                                                                                                                                                                                           363
                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 232.2; DB 10; Pred. No. 2.4e-53; 0; Mismatches 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143 g
                                                                                                                                                                                                                                                                                                                    cDNA
                                                                called and alt_trimmed with phred by cross_match with the -minscore
                                                                                                                                                                               Tags
                                                                                                                                                                                                    Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                    mRNA
5', mRNA
                                                                                                                                                                                                      Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                from
                                                                                                                                                                                D
                                                                                                                                                                                                                                                                                                                    linear
sequence.
                                                                                                                                                                                 normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                     Center
                                                                                                                                                                                                     Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                              EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18;
                                                                                                                                                                                bovine
                                                                    -minscore
                                                                                                                                                                                                                                                                                                                              28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    192
                                                                                                                                                                                                                                                                                                                                                                                                                                                       342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                 mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               disease
                                                                   18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
```

```
RESULT 15
BE478595
LOCUS
                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 281
                                                                                                     JOURNAL
                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                         445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          145
                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caggtgcagctgcaggagtcggggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGCCCTGAAATCCCGGCTCAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGGGAAGGCGCTGGAGTGGCTCAGTACAATAAACAGTGATGGAAGTACATTCTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTGCACGGTCTCTCTCTCACTGAGCAGCTATGGTGTAGGCTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                        TCA 447
                                                                                                                                                                                                                                                                                                                                                                                                                                     tca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATTTTGGTTGTGGACTTAACATTGATGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGTGTGGACCGTGACACCTGAGGACACGGCCACGTACTACTGTGCGAAAAGTACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                   BE478595
162919 BARC 5BOV Bos t
BE478595
BE478595.1 GI:9598128
EST:
                                           gland cDNA library requested (ags from a not upublished (2000) Contact: Sonstegard TS USDA, ARS, Beltsville Agricultural Research adlg. 200 Rm 2A, Beltsville, MD 20705, USA Tel: 301 504 8416
Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and
                                                                                                                                 Mapping of Expressed Sequence
                                                                                                                                                                              Bovidae; Bovinae; Bos.
1 (bases 1 to 511)
                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                         Bos taurus
                                                                                                                                                             Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           h 63.9%;
Similarity 77.4%;
81; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   104
                             301 504 8416
301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism-"Bos taurus"
/db_xref-"taxon:9913"
/clone_lib-"BARC 5BOV"
/tissue_type="pooled"
/lab_host-"DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note-"Vector: pCMV SPORT6; Site_1: XbaI; Site_2: X
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and
states."

149 c 129 g 106 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                    GI:9598128
                                                                                                                                                                                                                                                                                                                taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 231.8; DB 10;
Pred. No. 3.1e-53;
0; Mismatches 82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
                                                                                                                                                                                                                                                                                                                              511
                                                                                                                                                                                                                                                                                                                1 bp
                                                                                                                                Tags
                                                                                                                                                                                                                                                                                                              mRNA linear
5', mRNA sequence.
                                                                                                                                 from a normalized
 alt_trimmed with phred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        488;
                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                              EST
                                                                                                                                 bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                              28-AUG-2000
                                                                                                                                                                                                           Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
QУ
                                          Ъ
                                                                  Ş
                                                                                           밁
                                                                                                                  Qy
                                                                                                                                          B
                                                                                                                                                                  δÃ
                                                                                                                                                                                          Вр
                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
밁
                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
440
                                            380
                                                                                             320
                                                                                                                                                                                                                                         140
                      358 tcctca
                                                                                                                                             260 TCAGCCCTGAAATCCCGGCTCAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTG
                                                                                                                                                                    181
                                                                                                                                                                                            200
                                                                                                                                                                                                                                                                                                                                        Local Sir
hes 289;
                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                        08
                                                                                                                                                                                                                                                                                      aatggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtc
                                                                                                        acagccctacagtccccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                         TCCTCA
                                              AATTGGGGTACTGGTTGTAATACGGTCGATGCCTTGGGCCAAGGACTCCTGGTCACCGTC
                                                                                             TCAGTGACCAGCATAACACCTGAGGACACGGCCACATACTACTGTGCAAAAAGTGCTTAT
                                                                                                                                                                                           CCAGGGAAGGCGCTGGAGTGCCTCGGTGGTATAAGGGGGGGATGGAAGCACAGCCTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 21 row: O column: 7
Seq primer: ATTTAGGTGACACTATAG.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and -minmate
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                              110
445
                     363
                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                              D
                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DHIOB"
/note="Vector: pcwV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disease
states."
a 158 c 137 g 106 t
                                                                                                                                                                                                                                                                                                                                                 63.8%;
                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                       Score 231.6; DB 10;
Pred. No. 3.5e-53;
0; Mismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cross_match with the
                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                             511;
                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -minscore
                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                          139
                                                                                                                                                                                                                                                                                                               60
                                              439
                                                                                             379
                                                                                                                                             319
                                                                                                                                                                   240
                                                                                                                                                                                            259
                                                                                                                                                                                                                 180
                                                                                                                     297
                                                                                                                                                                                                                                                                                                                                        <u>;</u>
```

Search completed: August 11, 2002, 21:30:32 Job time: 6283 sec

THIS PAGE BLANK (USPTO)

· c

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
:
                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
    363
210
210
210
210
201.4
196.6
194
193.4
                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                     Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 654 W N L Z
    100.0
57.9
57.9
55.5
53.4
53.4
53.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                         August 11, 2002, 20:02:00; Search time 376.54 Seconds (without alignments) 1655.176 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                        SIDSI/gcgdata/geneseq/geneseqn-embl/NA198.DAT:

**: /SIDSI/gcgdata/geneseq/geneseqn-embl/NA198.DAT:

**: /SIDSI/gcgdata/geneseq/geneseqn-embl/NA199.DAT:

**: /SIDSI/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:

**: /SIDSI/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:

**: /SIDSI/gcgdata/geneseq/geneseqn-embl/NA2001.B.DAT:

**: /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1736436 seqs, 858457221 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-786-015-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _Geneseq__032802:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             caggtgcagctgcaggagtc.....tcctactcaccgtctcctca
    363
752
1510
1528
840
420
387
363
    21
18
18
18
21
21
18
20
20
                                                                                                                                                                                                                                          Ħ
  AAA08400
AAT69218
AAT69217
AAT69216
AAA08033
AAT77852
AAX78829
AAQ11845
AAT40806
                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3472872
Antibody fragment
Murine anti-human
Paraquat binding a
Anti-placental alk
MAb 10.1 heavy cha
                                                                                                             Carcinoembryonic a
2E12 sFv DNA. Not
Retrovirus vector
Retrovirus vector
                                                                                                                                                                                                                                     Description
```

179.4 49.	79.4 4	79.4 4	80 4	80 4	80	80 49	80.6	.6 49	80.6 4	80.6 4	81.4 5	81.6 5	182 5	2.2 5	.2	2.6 5	2.8 5	2.8 5	2.8 5	2.8 5	3.4 5	3.4 5	4.6 5	4.6 5	4.8 5	5	5	u	5	86.4 5	7 5	7.4 5	87.4
.4 720	حد د	4	31	y t	27.0	, c	. co	8	8	_	4	•	w	w	w	4	7	7	7	7	16	12	4	4	ı	12	12	L	7	w	t.s	11	J
14 A																																	
AAQ51540 AAT36463	4.0	4	4:		4	AAT42033	- 5			7		AAT85092			97		AAT13740		AQ51541	AQ05715	AQ70666	AQ70663	AX99477	AQ45429	AA38902	AQ70669	AQ70668	AT43807	AZ55925	AT43413	AAZ31382	8631	8631
Coding sequence of 18-2-3/TRY202' sin	cDNA encoding heav	oding hea	ι,	DMS238-22	PMS238-5-	DSECOND-00	nti-Lewis	À	anised anti	Humanised anti-CTL	otid	use mon	inv	Anti-NKG2D hybrido	Anti-NKG2D hybrido	Humanised anti-CD3	Single chain bindi	18-2-3/TRY59 singl	Coding sequence of	18-2-3-/TRY59. A	ScFv-DNaseI fusion	Scrv-BSRNase fusio	Antibody heavy cha	heavy	260F9 hybridoma VH	H17-Dip. ToxBSRN	H17-Dip. ToxBSRN	Anti-DNA antibody	ding anti	ift an	M. musc	Single chain anti-	^

ALIGNMENTS

RESULT AAA08400

AAA08400 standard; DNA; 363

ВP

Carcinoembryonic antigen; CEA; sheep; monoclonal antibody; tumour associated antigen; anti-carcinogenic; cytostatic; cancer therapy; ds. 09-MAR-2000 Ovis sp. Carcinoembryonic antigen affinity antibody heavy chain variable region. 13-JUL-2000 (first entry) WPI; 2000-375618/32. P-PSDB; AAY82528. WO200012556-A1. Harrison (KSBI-) KS BIOMEDIX LTD. 28-AUG-1998; 20-AUG-1999; 98GB-0018915 99WO-GB02729

A new high-affinity monoclonal antibody that is characterized by an

```
RESULT
AAT69218
ID 69218
AC AAT6
AC AAT6
XX AAT6
XX 2512
XX Modi
KW gene
XX 9906
XX W097
PN W097
XX W05-J
PF 27-N
                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                뫄
                                                                                                                                                                                                                                                                                                                                                                                                                        QΨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present in characterised The antibody i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The antibody is used in cancer therapy. Association of the new antibody with an antigen is favoured over dissociation in vivo and they therefore have longer localisation times at target sites, resulting in a higher concentration of antibodies localised at the target sites. Targeting the antibody to a site in vivo is improved. The concentration of antibody does not need to be too high which reduces side-effects and costs of therapy. The present sequence encodes the heavy chain variable region of a monoclonal antibody having affinity for carcinoembryonic antigen (CEA, a tumour associated antigen), which is used in the exemplification
                                                                                                    Modified sFv;
gene therapy;
 27-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acid-washed
                                                  WO9720048-A2
                                                                             Not specified
                                                                                                                                               2E12 sFv
                                                                                                                                                                       19-AUG-1997
                                                                                                                                                                                                AAT69218;
                                                                                                                                                                                                                            AAT69218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                   N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        present invention describes a high-affinity monoclonal antiboracterised by an acid-washed enzyme-linked immunosorbent assay
                                                                                                                                                                                                                                                                                                       |
|---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caggtgcagctgcaggagtcggggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                                                            tca
                                                                                                                                                                                                                                                                                                                                                         ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                            tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                                                         ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                 acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                                                                                                                tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccaggaaaggcgcttgagtggctaggtggtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 100 63; Conservative
                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                            363
                                                                                                                                                                                                                            standard; DNA;
                                                                                                                                                                                                                                                                                                                     363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  363 BP; 78 A; 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page 13-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          enzyme-linked
                                                                                                     cell adhesion; artificial ligand;
retrovirus; vector; 2E12; ss.
 96WO-US19051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunosorbent assay
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                          ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            363; DB 2
No. 1e-97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Η;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in cancer therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          363;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (EIA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
RESULT
AAT69217
ID AAT6
XX
AC AAT6
AC AAT6
XX
DT 19-A
XX
DE Retr
XX
Modi
                                                                                                                                                                                                                                                                                  뫄
                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A nucleic acid sequence (AAT69218) is provided of hybridoma 2E12 sFv. It was obtd. as an HindIII/BgIII fragment by PCR amplification (see also AAT69223-24). It is used in retrovirus vectors such as pLNC-2e12hJgG1hB7-1Tm (see also AAT69216) and pLNC-2e12gJgCcD58cpI (see also AAT69217) that code for novel sFv molecules which have been modified by connecting a transmembrane domain of a cell surface receptor to the antigen binding site of the molecule. This creates artificial ligands that stimulate adhesion between cells and enhance co-stimulatory activity during an immune response against disease. Such vectors can be used for gene therapy of e.g. cancer.
                                                      19-AUG-1997
                                                                               AAT69217;
                                                                                                          AAT69217
                         Retrovirus vector pLNC-2e12hlgG1CD58GPI encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Fig 12A; 69pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-NOV-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                              445
                                                                                                                                                                            745
                                                                                                                                                                                                     361
                                                                                                                                                                                                                               685
                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                       565
                                                                                                                                                                                                                                                                                                                                                                                            505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    385
                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
es 267; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match
                                                                                                                                  ω
                                                                                                                                                                          с
Т
                                                                                                                                                                                                     ť
                                                                                                                                                                                                                                           9gtgacagtgttccttatggttttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                  aaaatgaacagtctgcaaactgatgacacagccagatactactgtgccagagatggttat
                                                                                                                                                                                                                                                                                                                                                   acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                            acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                              agtaactttcattactatgttatggactactggggtcaaggaacctcagtcaccgtctcc
                                                                                                                                                                                                                                                                                              tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                       tcagctctcaaatccagactgagcatcaccaaggacaactccaagagccaagttttctta
                                                                                                                                                                                                                                                                                                                                                                                         ccaggaaagggtctggagtggctgggaatgatatggggtgatggaagcacagactataat
                                                                                                                                                                                                                                                                                                                                                                                                                                              acatgcaccgtctcagggttctcatttaaccggctatggtgtaaactgggttcgccagcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 caggitgcagcitgaaggagicaggaccitggccitggitggcgcccitcacagagccitgitccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ed sFv molecule for mediating adhesion between ns antibody binding site and transmembrane dome for enhancing immune responses to disease
                                                                                                                                                                            746
                                                                                                                                                                                                     362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BRISTOL-MYERS
                                                                                                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hayden
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95US-0007755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        188 A; 182 C;
                                                                                                          DNA;
                                                  entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ledbetter JA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57.9%;
73.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SQUIBB
                                                                                                          1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 210; DB Pred. No. 2.3e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        205 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mittler R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 18;
2.3e-52;
les 95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Τ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Winberg
                          modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of receptor,
                          SFV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  444
                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                            564
                                                                                                                                                                                                                                                                                  684
```

0;

cell

adhesion;

artificial

```
Query Match
Best Local S
Matches 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A nucleic acid sequence (AAT69217) is provided of a modified sFv encoded by retrovirus vector pLNC-2e12hlgG1CD58cp1. This comprises a fusion between hybridoma 2E12 sFv (see also AAT69218), human IgG1 Fc portion (see also AAT69219) and the transmembrane domain from the CD58 glyco-phosphoinositol (GPI) anchor (see also AAT69221) in vector pLNC. This is an example of novel sFv molecules modified by connecting a transmembrane domain of a cell surface receptor to the antigen binding site of the molecule. This creates artificial ligands that stimulate adhesion between cells and enhance costimulatory activity during an immune response against disease. Such vectors can be used for gene therapy of e.g. cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Modified sFv molecule for mediating adhesion between contains antibody binding site and transmembrane domuseful for enhancing immune responses to disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BRIM ) BRISTOL-MYERS SQUIBB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             05-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene therapy;
       740
                                          361
                                                                              680
                                                                                                                301
                                                                                                                                                     620
                                                                                                                                                                                           241
                                                                                                                                                                                                                                560
                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                    500
                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                             440
                                                                                                                                                                                                                                                                                                                                                                                                                                                    380
                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
mes 267; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caggtgcagctgcaggagtcggggacccagcctggtgaagccctcacagaccctctccctc
                                          ដ
                                                                                               acayccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                      acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
       ដូ
                                                                            agtaactttcattactatgttatggactactggggtcaaggaacctcagtcaccgtctcc
                                                                                                                                                     aaaatgaacagtctgcaaactgatgacacagccagatactactgtgccagagatggttat
                                                                                                                                                                          tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                            tcagctctcaaatccagactgagcatcaccaaggacaactccaagagccaagttttctta
                                                                                                                                                                                                                                                                                                   ccaggaaagggtctggagtggctgggaatgatatggggtgatggaagcacagactataat
                                                                                                                                                                                                                                                                                                                                                                         acatgcaccgtctcagggttctcattaaccggctatggtgtaaactgggttcgccagcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                  caggtgcagctgaaggagtcaggacctggcctggtggcgccctcacagagcctgtccatc
                                            362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fig 11A-B; 69pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      retrovirus; vector;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96WO-US19051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   381 A; 422 C; 394 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ledbetter JA,
                                                                                                                                                                                                                                                                                                                                                                                           57.9%;
73.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 210; DB 18
Pred. No. 2.9e-5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pLNC-2e12h1gG1CD58GPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mittler
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     313 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Winberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cells -
ain of receptor,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                    439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                     679
                                                                                                                                                                                                                              619
                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                360
                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                    559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ç
                                                                        ρ
                                                                                                                                             Qy
                                                                                                                                                                                                                          δÃ
Ωy
                                        망
                                                                                                                밁
                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                             QΥ
```

В

Ş

Š В Ş

RESULT

밁

Š 밁 õ 밁 Ş 밁 S

```
Query Mai
Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                   FC portion (see also AAT69219) and the transmembrane domain fro human B7-1 (CD80) (see also AAT69220) in vector pLWC. This is example of novel sFv molecules that are modified by connecting transmembrane domain of a cell surface receptor to the antigen binding site of the molecule. This creates artificial ligands stimulate adhesion between cells and enhance co-stimulatory activity during an immune response against disease. The vector can be used for gene therapy of e.g. cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           A nucleic acid sequence (AAT69216) is provided of a modified sFv encoded by retrovirus vector pLNC-2e12hlgGlhB7-Tm. This comprises a fusion between hybridoma 2E12 sFv (see also AAT69218), human IgG1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Modified sFv molecule for mediating adhesion betweentains antibody binding site and transmembrane useful for enhancing immune responses to disease
                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-NOV-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             05-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Modified sfv;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Retrovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAT69216 standard;
                                                                                                                                                         440
                                                                           181
                                                                                                                               121
                                                                                                                                                                                                            380
                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                    Н
                                                                                                                                                                                                                                                                                        Match
                                                 caggtgcagctgcaggagtcggggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                     acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
aaaatgaacagtctgcaaactgatgacacagccagatactactgtgccagagatggttat
            tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                 ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac
                                                                                                                                                      acatgcaccgtctcagggttctcattaaccggctatggtgtaaactgggttcgccagcct
                                                                                                                                                                                                            caggtgcagctgaaggagtcaggacctggcctggtggcgccctcacagagcctgtccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1997-310604/28
                                                                                                    ccaggaaagggtctggagtggctgggaatgatatggggtgatggaagcacagactataat
                                                                                                                                                                                                                                                              al Similarity
267; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BRISTOL-MYERS SQUIBB
                                                                                                                                                                                                                                                                                                                               1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hayden
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vector pLNC-2e12h1gG1hB7-1Tm
                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                               BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cell adhesion; artificial ligand; tumour; cancer; retrovirus; vector; pLNC-2e12hlgGlhB7-1Tm; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10A-B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95US-0007755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96WO-US19051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ï
                                                                                                                                                                                                                                                                                                                             380 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA; 1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ledbetter JA,
                                                                                                                                                                                                                                                                         57.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                69pp; English
                                                                                                                                                                                                                                                                                                                               434 C;
                                                                                                                                                                                                                                                             Score 210; DB Pred. No. 2.9e 0; Mismatches
                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ဗ
                                                                                                                                                                                                                                                                                                                               399
                                                                                                                                                                                                                                                                        210;
No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mittler R,
                                                                                                                                                                                                                                                                                                                             G;
                                                                                                                                                                                                                                                                                                                               315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             encoding modified
                                                                                                                                                                                                                                                             DB 18;
2.9e-52;
les 95;
                                                                                                                                                                                                                                                                                                                               Τ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     between cells
                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Winberg
                                                                                                                                                                                                                                                                                                                               other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       domain
                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of receptor,
                                                                                                                                                                                                                                                                                                                                                                      vectors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SFV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                from
                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                              Gaps
                                                  619
                                                                           240
                                                                                                                               180
                                                                                                                                                                                   120
                                                                                                                                                                                                                                      60
                                                                                                                                                          499
```

0

```
RESULT
AAA08033
 밁
                          8
                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                               The present invention describes an immunoassay (I) for assessing CC processing and/or product quality characteristics of grain from a wheat CC cultivar, by using a monoclonal antibody or fragment specific for one CC member of high molecular weight glutenin subunit pair (HMW-GS). The CC method comprises exposing a wheat grain sample to the antibody, under CC binding conditions, and detecting the binding. The antibody has been CC raised with a preparation comprising the HMW-GS member in a CC substantially denatured form. The immunoassay is useful for assessing CC processing and/or product quality characteristics of grain from a wheat CC cultivar and for discriminating HMW-GS in wheat grains associated with CC superior bread and pasta-making qualities, for identifying preferred CC wheat cultivars in plant breeding. Simple assessment of HMW-GS CC composition and wheat grain quality can be done from small samples of CC grain, meal or flour, e.g. 500mg-10g, making it more economical than CC grain, meal or flour, e.g. 500mg-10g, making it more economical than CC The present sequence encodes a specifically claimed antibody fragment correct correct in the method of the invention.
                                                        Matches
                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Glutenin subunit; wheat; antibody; immunoassay; identification; plant breeding; grain; flour; bread; pasta; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                             subunits
                                                                                                                                                                                                                                                                                                                                                                                                                                                            breeding,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Giersch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200012557-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Antibody fragment
                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAA08033 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in wheat useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Immunoassay for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (QUAL-) QUALITY WHEAT CRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ហ
             caggtgcagctgcaggagtcggggacccagcctggtgaagccctcacagaccctctcccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000-256593/22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ťc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agtaactttcattactatgttatggactactggggtcaaggaacctcagtcaccgtctcc
caggtccaactgcaggagtcaggacctggcctagcgcagccctcacagagcctgtccatc
                                                        262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M.
                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        362
                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                 Page 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            involves using
                                                                                                                          BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Skerritt JH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98AU-0005548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-AU00690
                                                                                                                                                                                                                                                                                                                                                                                                                                                       discriminating high molecular weight glutenin subunits for identifying desired wheat cultivars in plant ves using monocional antibody specific for glutenin
                                                                                                                            210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SCFV
                                                                                                                                                                                                                                                                                                                                                                                                                 58pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                    55.5%;
                                                                                                                            Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TG8-D4 polynucleotide sequence SEQ ID NO:1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                            226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hill AS;
                                                     Score 201.4;
Pred. No. 8.4e
0; Mismatches
                                                                                                                          c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВP
                                                                                                                          227
                                                                                                                          G;
                                                                                                                          176
                                                   }.4e-50;
nes 101;
                                                                                                                          Ŧ;
                                                                                 DB
                                                                                                                          1 other;
                                                                                 21;
                                                      Indels
                                                                                 Length
                                                                                  840;
                                                      0,
                                                     Gaps
                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                      0;
```

```
AAT778. AAT7778. AAT77788. AAT777888. AAT77788. AAT777888. AAT77788. AAT777888. AAT77788. AAT77788. AAT777888. AAT7778888. AAT777888. AAT777888. AAT7778888. AAT7778888. AAT777888. AAT7778888. AAT777888. AAT777888. AAT777888. AAT7778888. AAT7778888.
                                                                                                                                                Recombinant conjugate antibody mol., n antigen - elicits enhanced immune resp adjuvant to generate antibodies which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                       P-PSDB; AAW22538
                                                                                                                                                                                                                                                                                                                                Anand NN,
                                                                                                                                                                                                                                                                                                                                                                                                                                  07-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19-DEC-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9640941-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antigen delivery;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Antibody; heavy chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Murine anti-human class II monoclonal antibody 44H104 HL chain cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAT77852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAT77852 standard; cDNA; 420
                                                                                                                                                                                                                                                                                                                                                                                (CONN-) CONNAUGHT LAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  σ
                                                                                                                                                                                                                                                                              1997-077271/07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acagecetacagtecegacteagegteaceagggacacetecaagageeaatteteceetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tactatagagattactatgctatggactactggggccaagggaccacggtcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggtgacagtgttccttatggttttggactactggagcccagggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aaaatgaacagtctgcaaactgatgacacagccacgtactactgtgccaaagggatcccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tcagctctcaaatccagactgagcatcagcaaggacaactccaagagccaagttttctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ccaggaaagggtctggagtggagtgatatgggataatggaaacacagactataat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac
                                                                                                                        diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               382
                                                                                                                                                                                                                                                                                                                              Barber BH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                  95US-0483576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96WO-CA00400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1..420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              enhance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Encodes 44H104 heavy chain variable region, including secretion signal; termination codon not given"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           variable region; hybridoma cell line 44H104;
ce; stimulate; vaccine; immunodiagnosis;
                                                                                                                                                                                                                                                                                                                              Caterini JE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                        response
                                                                                                                                                                                                                                                                                                                              Cates
                                                                                                                                                                                                  modified
                                                                                                                                                     are
                                                                                                                                                     useful in
                                                                                                                                                                                                                                                                                                                              ეე
                                                                                                                                                                             without
                                                                                                                                                                             for delivering a
                                                                                                                                                                                                                                                                                                                                Klein MH;
                                                                                                                                                     vaccines or
                                                                                                                                                                                                  an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
```

Novel recombinant antibody specific

conjugate ant for a surface

antibody moled

molecules

comprise

ise a monoc presenting

monoclonal

of.

antigen

Example 1; Fig 1B; 64pp; English.

밁 δÃ Дb δÃ 밁 Ş Ъ Q Вþ Q 밁 γQ

```
RESULT
AAX78829
                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cells (APC), genetically modified to contain at least one antigen exclusively at one or more preselected sites. The conjugate is capable of delivering the antigen to APC and eliciting an immune response to the antigen. The new conjugates are useful as vaccines and are able to elicit an enhanced immune response without the use of an adjuvant. In a specific example, a conjugate was constructed using the murine anti-human class II monoclonal antibody secreted by hybridoma 44H104. The peptide CLTB36 was chosen as antigen; it consists of a tandemly linked T and B cell epitope derived from HIV MN strain. The present sequence encodes the heavy chain variable region which was PCR amplified from 44H104 and used in the preparation of a
                                                                                                                 vacuole;
variable
                                                                                        Unidentified
                                                                                                                                                                                                                                                                              AAX78829 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
            15-DEC-1998;
                                     01-JUL-1999
                                                                                                                                           free
                                                                                                                                                           weed
                                                                                                                                                                                                Paraquat binding antibody PQXB1/2 variable region light chain
                                                                                                                                                                                                                            07-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   conjugate
                                                                                                                                                                                                                                                                                                                                                  418
                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                    358
                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                        7
                                                                                                                                           control; radical;
                                                                                                                                                                                                                                                                                                                                                  tca
                                                                                                                                                                                                                                                                                                                                                                           tca
                                                                                                                                                                                                                                                                                                                                                                                                               ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                     aaaatgagcagtctgcaaactgatgacacagccatgtactactgtgccaga--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     acagccctacagtcccgactcagcgtcaccagggacacctccaagagcccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccaggaaaggcgcttgagtggctaggtgtgtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acttgcactgtctctgggttttcattaaccagctatggtgtacactgggttcgccagcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               caggtgcagctgaaggagtcaggacctggcctggtggcgccctcacagagcctgtccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                                                                                                                                                                  ggtgactacgtccactatgctatggactactggggtcaaggaacctcagtcaccgcctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tcggctctcatgtccagactgagcatcagcaaagacaacttcaagagccaagttttctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ccaggaaagggtctggagtggctggagtaatatgggctggtggaagcataaattataat
                                                                                                                 cell su:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                           antibody; light chain; herbicide; resistant; crop
rol; tolerant; diquat; photosynthesis inhibitor; ph
cal; lipid peroxidation; electron transport; photos
cell surface; cytotoxic; sensitive; light chain; PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 with antigen CLTB36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B₽;
            98WO-GB03760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95
                                                                                                                                                                                                                                                                              CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ?
                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54.2%;
73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        111 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 196.6; DB 1
Pred. No. 1.8e-48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G; 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                         photosystem II;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     -gcctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         w
'-
                                                                                                                                                                   plant;
                                                                                                                                                                                                  CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                     357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲.
```

RESULT AAQ11845

358 361

ç

359 362

_ ç

멍 Qy

298 301

ggttactacgattactttggtatggactactggggtcaaggaatctcagtcaccgtctcc ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc

300

360 297 180 180

240

60

1;

```
Qy
                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                 δÃ
   밁
                                     δÃ
                                                                              밁
                                                                                                                                                      밁
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CC confer herbicide resistance activity. Crop plants, such as soybean, CC confer herbicide resistance activity. Crop plants, such as soybean, CC cotton, tobacco, sugarbeet, oilseed rape, canola, flax, sunflower, CC potato, tomato, alfalia, lettuce, maize, wheat, sorghum, rye, bananas, CC barley, oat, turf grass, forage grass, sugar cane, pea, field bean, CC rice, pine, poplar, apple, grape, citrus or nut plants, transformed CC with a herbicide binding protein gene are resistant to the herbicide. CC Hence, weeds can be selectively controlled in a field of the transformed CC crops. The plants are substantially resistant or tolerant to herbicides, CC such as paraquat or diquat, that inhibit photosynthesis by accepting CC electrons from photosystem I thus generating free radicals which cause CC lipid peroxidation or by blocking electron transport in photosystem II. CC The herbicide binding proteins advantageously sequester the herbicide, CC sequestration at the cell surface or in the vacuoles of a treated plant. CC equestration at the cell surface prevents the entry of the herbicide cannot reach its intracellular target and exert any significant cytotoxic effect. The herbicide binding protein consistent of the mobility of the herbicide reaching particularly sensitive corpans. Additionally, tolerant plants can be produced against herbicides or that have more than one target sites.
                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Sim
Matches 264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 387 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 that have more than
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Herbicide binding proteins and related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19-DEC-1997;
                                                                                                                   181
                                                                                                                                                        121
   241
                                                                              181
                                                                                                                                                                                         121
                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                 acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                          caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1999-405173/34.
DB; AAY25388.
caattgagcagtctgcaaattgatgacacagccaggtactactgtgccaga-
                                       tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                          ccagctctcaaatccagactgagcatcagcagagacacctccaggagccaagttttctta
                                                                                               acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                    ccaggaaagggtctagagtggttggccatgatatggggtgctgggagcacagactatcat
                                                                                                                                                                       acatytaccytctcaggattctcattaaccyactctggtgtaaattgggttcgtcagtct
                                                                                                                                                                                                                                                                                                    caggtgcagctgcaggagtcaggacctggcctggtggcgccctcacagagcctgtccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page
                                                                                                                                                                                                                                                                                                                                                                              53.4%;
ilarity 72.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97GB-0026955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             one target
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ç;
                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                Score 194; DB 2
Pred. No. 1e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               site.
                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polynucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Η,
                                                                                                                                                                                                                                                                                                                                                                                                                DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                  95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            other;
                                                                                                                                                                                                                                                                                                                                                                                                                 Length 387;
                                                                                                                                                                                                                                                                                                                                                                                Indels
gatcag
                                                                                                                                                                                                                                                                                                                                                                                ω
--
                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

```
Qy
                                               밁
                                                                   δÃ
                                                                                                                                                        밁
                                                                                              Query Match
Best Local S
Matches 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Placental a PLAP; CDR;
                                                                                                                                                                                                 The murine anti-PLAP VH gene contains 3 CDRs which are used to reshape the human anti-PLAP VH gene (AAQ11847). The murine anti-PLAP Vk gene (AAQ11846) CDRs were used to reshape the human anti-PLAP gene Vk (AAQ11848). The specific binder for human PLAP contains at least one of the former 3 CDRs and/or at least one of the latter CDRs. The produced antibodies are more readily tolerated when administered to a human patient. Antibody reagents can be used to identify, e.g. by serum testing or imaging, and/or to treat PLAP-producing cancers. Such cancers can occur as, e.g. breast cancer, ovarian cancer and
                                                                                                                                                                                                                                                                                                                    Disclosure; Fig 1; 28pp; English.
                                                                                                                                                                                                                                                                                                                                         phosphatase - for treating and diagnosing cancers e.g. breast,
ovarian and colon cancers and pleural effusions
                                                                                                                                                                                                                                                                                                                                                                                                   WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                           Verhoeyen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-SEP-1990;
17-NOV-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-NOV-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-MAY-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EP429242-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Anti-placental alkaline phosphatase VH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31-JUL-1991
                                                                                                                                                      Sequence 363
                                                                                                                                                                                         colon
                                                                                                                                                                                                                                                                                                                                                                 Synthetic specific binder for human placental alkaline
                                                                                                                                                                                                                                                                                                                                                                                                                                                (UNIL ) UNILEVER PLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAQ11845 standard;
   61
                        61
                                                           caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                                                                                                                                                        1991-157662/22.
DB; AAR11984.
acatgcactgtctcagggttctcattaaccagttatggtgtaagctgggttcgccagcct
            acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                               caggtgcagctgaaggagtcaggacctggcctggtggcgccctcacagagcctgtccatc
                                                                                                                                                                                        cancer or
                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alkaline phosphatase; antibody; cancer; heavy chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SS
                                                                                              Conservative
                                                                                                                                                      ₿₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90GB-0019552
89GB-0026045
                                                                                                                                                                                        can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90EP-0312407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= a
/label= CDR1
148..195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag=
/label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers 91..105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               292..330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= b
/label= CDR2
                                                                                                                                                      98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA;
                                                                                                                                                      Α,
                                                                                                                                                                                       manifest themselves as liquids such as pleural
                                                                                                       53.3%;
                                                                                                                                                      94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDR3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 363
                                                                                                                                                     Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                              0
                                                                                                       Score 193.4;
Pred. No. 1.
                                                                                                                                                      94
                                                                                                                                                      G;
                                                                                              Mismatches
                                                                                                                                                     77 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene.
                                                                                                                                                      0
                                                                                                          .5e-47;
                                                                                                                  DB 12;
                                                                                                                                                      other;
                                                                                              106;
                                                                                            Indels
                                                                                                                  Length
                                                                                                                   363;
                                                                                            0
                                                                                           Gaps
                                             60
                                                                    60
                                                                                            0
```

```
Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
          antibodies were generated by immunising Balb/C mice with recombined type II phospholipase A2. Spleen cells from the mice were fused with mouse myeloma B3U1 (B3x63Ay8.U1) and the hybridomas obtained were screened for phospholipase A2 inhibitory activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Monoclonal antibody; phospholipase; myocardial infarction; pancreatitis; cerebral infarction; acute kidney failure; colitis; chronic rheumatism; adult respiratory distress syndrome; cardiac shock; treatment; preclinical testing; disease; hybridoma;
                                                         infarction, acute kidney failure, chronic rheumatism, pancreatitis, adult respiratory distress syndrome and
                                                                                                                                            Monoclonal antibody inhibiting type II phospholipase A2 for treatment of myocardial and cerebral infarction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAT40806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAT40806 standard;
                                                                                 Monoclonal antibodies which inhibit type II phospholipase A2 are useful in the treatment of myocardial infarction, cerebral
                                                                                                                      Example 6;
                                                                                                                                                                                                                    Kawauchi Y,
                                                                                                                                                                                                                                            (YAMA ) YAMANOUCHI PHARM CO LTD
                                                                                                                                                                                                                                                                    29-DEC-1994;
                                                                                                                                                                                                                                                                                           27-DEC-1995;
                                                                                                                                                                                                                                                                                                                  11-JUL-1996
                                                                                                                                                                                                                                                                                                                                          WO9620959-A1
                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MAb 10.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1996-333946/33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggtagcagctacgtgggggctatggaatactggggtcaaggaacctcagtcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aaactgaacagtctgcaaactgatgacacagccacgtactactgtgccaaaccccactac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tcagctctcatatccagactgagcatcaaccaaggataactccaagagccaagttttctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ccaagaaagggtctggagtggctgggagtaatatgggaagacgggagcacaaattatcat
                                                                                                                                                                                 AAW01146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      heavy
                                                                                                                     Figure 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first
                                                                                                                                                                                                                    Masuho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chain,
                                                                                                                                                                                                                                                                    94JP-0340006
                                                                                                                                                                                                                                                                                            95WO-JP02714
                                                                                                                                                                                                                                                                                                                                                              /*tag= a
/product=
                                                                                                                                                                                                                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
1..414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      directed against type II
                                                                                                                   69pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ៥
                                                                                                                                                                                                                    Takasaki J,
                                                                                                                                                                                                                                                                                                                                                               Monoclonal antibody heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP
                                                                                                                                                                                                                    Yasunaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      phospholipase A2
                                                          cardiac shock, colitis. The
                                                                                                                                                          activity
                                           recombinant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
```

clones

activity.

```
RESULT 1
AATRO AATRO
XX AATRO

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 263; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           were cultured and the antibody isolated from the culture supernatant by precipitation with ammonium sulphate and purification on a column of protein A-Sepharose CLAB. Because the antibody acts on the primate and mouse forms of enzyme as well as human it is particularly suitable for preclinical testing.
                                                                                                                                                                                                                                                                                                     W09734634-A1
                                                                                                                                                                                                                                                                                                                                                   Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                               SCFV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Antibody construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Single chain
                                                                      Cheung NV,
                                                                                                                                                                20-MAR-1996;
                                                                                                                                                                                                           20-MAR-1997;
                                                                                                                                                                                                                                                         25-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                               pro-drug
                                                                                                                                                                                                                                                                                                                                                                                                                     tissue imaging;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAT86310;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAT86310 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 414
                                                                                                                    (SLOK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaaccctctcccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acagccctacagtcccgactcagcgtcaccaggggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tca -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       aaaatgaacaatctgcaaactgatgacacagccaggtactactgtgccaga----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccaggaaagggtctggagtggctggaatgatatggactgatggaatcacagactataat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acatgtaccgtctcagggttctcattaaccgactttggtgtaaactgggttcgccagcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caggtgcagctgaaggagtcaggacctggcctggtggcgccctcacagagcctgtccatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gcatactacggcttctatgctatggactactggggtcaaggaacctcagtcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tcagttctcaaatccagactgagcatcagcaaggacacctccaagagccaagttttcttg
                                                                                                                                                                                                                                                                                                                                                                                            tumour; neuroblastoma; osteosarcoma; soft tissu
e imaging; target delivery; toxin; streptavidin;
rug converting enzyme; GD2-targeted lymphocyte;
                                                                                                                  ) SLOAN KETTERING INST CANCER RES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           414
                                                                      Guo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anti-disialoganglioside GD2 antibody 3G6-scFv.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                96US-0013703
                                                                                                                                                                                                              97WO-US04427
                                                                      Ħ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA;
                                                                      Larson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   disialoganglioside; GD2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52.5%;
72.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           714
                                                                      WS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 190.6;
Pred. No. 1.1e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΒP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                      Rivlin K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ດ
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .1e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 17;
                                                                      Sadelain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   single chain Fv fragment;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94;
                                                                                                                                                                                                                                                                                                                                                                                                                                           tissue sarcoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                      X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      purification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             414;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -gat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
```

Matches

Conservative

0,

Mismatches

96;

Indels Length

6,

1;

Query Match
Best Local Similarity

51.6%; 71.9%;

Score 187.4; DB 1 Pred. No. 1.1e-45;

18;

Sequence

714

В₽;

174

Α,

168

Ç

205

<u>ი</u> 167 7,

0

```
The present sequence encodes a recombinant single chain peptide, 366-scfv. The peptide is an antibody construct comprising the variable regions of the heavy and light chains of an antibody against disialoganglioside (GD2) as a single chain fv fragment (scfv). GD2 occur in many tumours types including neuroblastoma, osteosarcomas and other soft tissue sarcomas, medulloblastomas, high grade astrocytomas, melalloblastomas, high grade astrocytomas, melalloblastomas, high grade astrocytomas, tabelled, preferably with 99m-Tc, for tissue imaging of cells expressing GD2. It can also be used to target delivery of a therapeutic or pre-therapeutic agent, such as a toxin, streptavidin or a pro-drug converting enzyme, to cells expressing GD2. The peptide may further comprise CD8 to facilitate the formation of GD2-targeted lymphocytes.

T cells containing the peptide can also be used to target GD2-producing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Recombinant single chain anti-disialoganglioside useful to detect tumour cells expressing GD2 and therapeutic agents, e.g. toxins, to such cells
                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                    Page 11-12;
                                                                                                                                                                                                                                                                                                                                                                                                                    31pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GD2 antib
to target
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antibody
                                                                                                                                                                                             expressing
                                                                                                                                                                                                                                                                                                 occurs
```

```
361
                                                                      658
                                                                                                                                           598
                                                                                                                                                                              241
                                                                                                                                                                                                                  538
                                                                                                                                                                                                                                                                                     478
                                                                                                                                                                                                                                                                                                                                                          418
                                                                                                                                                                                                                                                                                                                                                                                                                              358
712 tca
                                                                                                        301
                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \vdash
                                   tca
                                                                  aactacgg--
                                                                                       ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                               acagccctacagtcccgactcagcgtcaccaggggacacctccaagagcccaattctccctg
                                                                                                                                                                                                                                                                                                     ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                            acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                               caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc
                                                                                                                                         aaaatgaacagtctgcaaactgatgacacagccatgtactactgtgccagtcggggggt
                                                                                                                                                          tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                              toggotottatgtocagactgagcatcagcaaggacaactccaagagccaagttttotta
                                                                                                                                                                                                                                                                                                                                                        acttgcactgtctctgggttttcattaaccaattatggtgtacactgggttcgccagcct
                                                                                                                                                                                                                                                                                                                                                                                                                           caggtgcaggtgaaggagtcaggacctggcctggtggcgccctcacagagcctgtccatc
                                                                                                                                                                                                                                                                                 ccaggaaagggtctggagtggctgggagtaatatgggctggtggaagcacaaattataat
714
                                   363
                                                                    ---ctatgctttggactactggggtcaaggaacctcagtcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                              417
                                                                                                                                           657
                                                                                                                                                                              300
                                                                                                                                                                                                                  597
                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                     537
                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                        477
                                                                                                        360
```

```
RESULT 11
AAT86312
ID AAT863
XX AAT863
XX O6-APR
XX Single
XX Antibo
KW ScFV;
KW tissue
KW pro-dr
XX
XX Synthe
                                scFv; tumour; neuroblastoma; osteosarcoma; soft tissu
tissue imaging; target delivery; toxin; streptavidin;
pro-drug converting enzyme; GD2-targeted lymphocyte;
                                                                  Antibody construct; disialoganglioside; GD2; single chain Fv fragment; scFv; tumour; neuroblastoma; osteosarcoma; soft tissue sarcoma;
                                                                                                                    Single
                                                                                                                                                      06-APR-1998
                                                                                                                                                                                          AAT86312;
                                                                                                                                                                                                                           AAT86312
                                                                                                                    chain
                                                                                                                                                                                                                           standard;
                                                                                                                    anti-disialoganglioside GD2 antibody 3G6-scFv-streptavidin
                                                                                                                                                     (first entry)
                                                                                                                                                                                                                           DNA;
                                                                                                                                                                                                                           1173
```

Q B Ş 멍 Qy 밁 QY 밁 δã 밁 δÕ 밁 20

В

δã 밁 QY 멍

뫄

```
멍
                                                                                                              δ
                                                                                                                                                               Вb
                                                                                                                                                                                                              δã
                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   soft tissue sarcomas, medulloblastomas, high grade astrocytomas, melanomas and small cell lung cancer. The peptide can be detectably labelled, preferably with 99m Tc, for tissue imaging of cells expressing GD2. It can also be used to target delivery of a therapeutic or pre-therapeutic agent, such as a toxin, streptavidin (e.g. present sequence) or a pro-drug converting enzyme, to cells expressing GD2. The peptide may further comprise CD8 to facilitate the formation of GD2-targeted lymphocytes. T cells containing the peptide can also be used to target GD2-producing tumour cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence encodes a recombinant single chain peptide, 3G6-ScFv-Streptavidin. The peptide is an antibody construct comprising the variable regions of the heavy and light chains of an antibody against disialoganglioside (GD2) as a single chain Fv fragment (ScFv). GD2 occurs in many tumours types including neuroblastoms, osteosarcomas and other contents of the contents of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Recombinant single chain anti-disialoganglioside useful to detect tumour cells expressing GD2 and therapeutic agents, e.g. toxins, to such cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1997-479996/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SLOK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20-MAR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-SEP-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9734634-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1173
                                                                            538
                                                                                                                                                                       478
                             241
                                                                                                                        181
                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                    418
                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 71.9 nes 261; Conservative
                                                                                                                                                                                                                                                                                                                                                     tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                             acagccctacagtcccgactcagcgtcaccagggacacctccaagagcccaattctccctg
                                                                                                                                                                                             ccaggaaaggcgcttgagtggctaggtgtgtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                        acctgcacggtctctggattctcattaaccaagtatggtgtttagttgggtccgccaggct
                                                                       tcggctcttatgtccagactgagcatcagcaaggacaactccaagagccaagttttctta
                                                                                                                                                                  ccaggaaagggtctggagtggctgggagtaatatgggctggtggaagcacaaattataat
                                                                                                                                                                                                                                                             acttgcactgtctctgggttttcattaaccaattatggtgtacactgggttcgccagcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SLOAN KETTERING INST CANCER RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96US-0013703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97WO-US04427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Η,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note=
739..0
/*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    715..738
/*tag= l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
1..714
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              270 A; 334 C; 340 G; 229 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Larson SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51.6%;
71.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "linker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "encodes single chain antibody 3G6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "encodes streptavidin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       b
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 187.4; DB 10, Pred. No. 1.3e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seqeunce'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rivlin K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB_18; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sadelain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F۷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GD2
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          target
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antibody -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of
                                                                                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                also be used
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                  537
                                                                                                                                                                                                                                                                                                                                                             417
                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲.
```

ρy 밁 Š

Query Match Best Local Similarity

51.5%;

Matches

Conservative

0,

Score 187; DB 20; Pred. No. 1.2e-45; 0; Mismatches 91;

Length

Indels

9;

Gaps

۳.

60

caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc

В

61 61

acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct caggtncagctgaaggagtcaggacctggcctggtggcaccctcacagagcctgtccatc

```
RESULT 1
AAZ31382
                                 The invention provides a monoclonal antibody (MAb) designated 1A7, which elicits an anti-GD2 (tumor-associated antigen) immunological response in humans. MAb 1A7 has defined light and heavy chain variable region sequences. The MAb 1A7 and polypeptides can be used for eliciting an anti-GD2 immune response. The polypeptides can also be used for detecting or purifying anti-GD2 antibody. The products can be used for treating GD2 -associated diseases, e.g. melanoma, neuroblastoma, glioma, soft tissue carcinoma, and small cell carcinoma. They can be used for palliating the disease or for reducing the risk of recurrence. Sequences AAC31373-90 represent sequences that closely matched MAb 1A7 heavy chain variable region encoding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                               Monoclonal antibody 1A7 which elicits
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-JAN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US5977316-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             neuroblastoma; glioma;
tumor-associated antige
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Monoclonal antibody; MAb; 1A7; GD2; immune response; melanoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MMASWS1H M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAZ31382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAZ31382
Sequence 351 BP;
                                                                                                                                                                                                                                                                                                                     Disclosure; Fig 13B; 74pp; English
                                                                                                                                                                                                                                                                                                                                                                  response, useful for the development treatment of cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16-JAN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (KENT ) UNIV KENTUCKY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          712 tca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 tca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             658 aactacgg---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1999-619711/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aaaatgaacagtctgcaaactgatgacacagccatgtactactgtgccagtcgggggggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chatterjee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95US-0372676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96US-0591196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---ctatgctttggactactggggtcaaggaacctcagtcaccgtctcc
95 A; 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A.SW mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  soft
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351
Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chatterjee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tissue carcinoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВP
88 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for
80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASWS1 antibody heavy chain
                                                                                                                                                                                                                                                                                                                                                                                        s an anti-GD2
of products f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X
T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       small
                                                                                                                                                                                                                                                                                                                                                                                          for the detection
                                                                                                                                                                                                                                                                                                                                                                                                                  immunological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cell carcinoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          657
                                                                                                                                                                                                                                                                                                                                                                                          and
```

FR-2

```
RESULT 13
AAT43413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                             misc_RNA
                                                                                                           misc_RNA
                                                                                                                                                                                                                                                    misc_RNA
                                                                                                                                                                                                                                                                                                  CDS
                misc_RNA
                                                                                                                                                        misc_RNA
                                                                                                                                                                                                       misc_RNA
                                                                                                                                                                                                                                                                                                                        Rattus
                                                                                                                                                                                                                                                                                                                                      Xenograft rejection; xenotransplantation; organ
animal model; pig; monoclonal antibody; IH21H7;
                                                                                                                                                                                                                                                                                                                                                                                             AAT43413;
                                                                                                                                                                                                                                                                                                                                                              Xenograft antibody
                                                                                                                                                                                                                                                                                                                                                                              17-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                            AAT43413
                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tacgac-----tatgctatggactactggggtcaaggaacctcagtcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ggtgacagtgttccttatggttttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           фs
                                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                                                           /*tag= c
/standard_name= Ig Heavy Cuc
/label= D-Segment
/note= "diversity segment o
variable region"
                                                                                  /*tag= e
/standard_nam
/label= FR-1
                                                                                                                                                                                                                                                     /note-
1..291
                                     /standard_
/label= CI
                                                                                                                 /standard_name= Ig heavy
/label= JH-Segment
/note= "joining segment of variable region"
                                                                                                                                                        313 . . 357
                                                                                                                                                                                                           /standard_name= Ig heavy cha
/label= VH_Segment
/note= "variable segment of
variable region"
                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                          /product= immunoglobulin variable region
/standard_name= Ig heavy chain variable reg
/label= VH_Region
/note= "IH21H7 heavy chain variable region"
/*tag= g
/standard_name=
                106..151
                                                                                                                                                                                                       292..312
                               /note-
                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                              IH21H7
                                                                                                                                                                                                                                                                                                                                                                                                            CDNA
                                                                                                                                                                                                                                                                                                                                                                             entry;
                                                                   "framework region variable region"
                      "complementarity determining IH21H7 heavy chain variable
                                                                                                                                                 ۵
                                                                                                                                                                                                                                                                                                                                                                                                           ç
                                              name-
                                                                                           _name= Framework region
                                                                                                                                                                                                                                                                                                                                                             heavy chain variable region cDNA
                                                                                                                                                                                                                                                                                                                                                                                                           mRNA;
                                              CDR-1
Framework
                                                                                                                                                                                                                                                                                                                                                                                                            357
                                                                                                                                        heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                            ΒP
                                                                                                                          of
                                                                           _
                                                                                                                                                                                                                                    chain
                                                                                                                                                                                     chain diversity segment
                                                                                                                                                                       of.
                                                                            of IH21H7
                                                                                                                         IH21H7 heavy chain
                                                                                                                                                                       IH21H7
                                                                                                                                       joining segment
                                                                                                                                                                                                                                     variable segment
                                                                                                                                                                                                                                                                                                                                       transplant;
ds.
                                                                                                                                                                                                                    heavy
                      region 1
                                                                                                                                                                       heavy chain
                                                                            neavy
                                                                                                                                                                                                                                                                           region
                                                                                                                                                                                                                     chain
                              of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
```

```
Š
                              밁
                                               δÃ
                                                                  Query Match
Best Local S
Matches 260
                                                                                                                                             (AAW06204) of the LEW rat anti-porcine xenograft monoclonal antibody 1H21H7. It was obtd. from a IH21H7 heavy chain cDNA library by phage display and PCR amplification, and can be used to produce recombinant IH21H7 antibody fragments, e.g. F(ab')2 and Fab'. These block binding of preformed anti-donor xenograft antibodies in a recipient animal serum to antigen expressed by endothelial cells of the xenograft, i.e. they inhibit antibody-mediated rejection, received by prolonging the survival of the pig xenograft in the
                                                                                                                                                                                                                                                                  Inhibiting xenograft the graft - prevents graft survival
                                                                                                                  Sequence
                                                                                                                                      recipient.
                                                                                                                                                                                                                             A cDNA clone (AAT43413) codes for the variable heavy chain segment
                                                                                                                                                                                                                                                Claim 7; Page 113-114; 135pp;
                                                                                                                                                                                                                                                                                                           P-PSDB; AAW06204
                                                                                                                                                                                                                                                                                                                                                           (CEDA-) CEDARS SINAI MEDICAL
                                                                                                                                                                                                                                                                                                                                                                             15-маү-1995;
                                                                                                                                                                                                                                                                                                                                                                                                14-MAY-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                   21-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9636358-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_RNA
            62
                              2
                                                 N
                                       aggtgcagctgcaggagtcggggacccagcctggtgaagccctcacagaccctctccctca
                                                                                                                                                                                                                                                                                                                    1997-011852/01.
cctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggctc
                            aggtcaagctgcagtcaggacctggcctggtgcagccctcacagaccctgtctctca
                                                                                                                                                                                                                                                                                                                                        D۷,
                                                                              Similarity
                                                                                                                     357
                                                                 51.3%;
nilarity 71.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                        Makowka
                                                                                                                    вр;
                                                                                                                                                                                                                                                                                                                                                                              9508-0440621
                                                                                                                                                                                                                                                                                                                                                                                                96WO-US06804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label=
/note= "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /standard
/label= C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /standard
/label= F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "framework region"
variable region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /standard_name=
/label= FR-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          325..357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   292..324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             199..291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /standard_name=
                                                                                                                    89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag=
                                                                                                                   Α;
                                                                                                                                                                                                                                                                                                                                       Ļ
                                                                                                                                                                                                                                                                            rejection by modifying antigen expression of binding of anti-donor antibody and prolongs
                                                                                                                                                                                                                                                                                                                                                                                                                                                       "framewrok region variable region"
                                                                                                                     97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "complementarity determining IH21H7 heavy chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "complementarity determining IH21H7 heavy chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "framework region variable region"
                                                                                                                                                                                                                                                                                                                                        Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FR-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDR-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDR-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _name= CDR-3
                                                                                                                   ç;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _name=
                                                                                                                                                                                                                                                                                                                                       G
                                                                  Score 186.4; I Pred. No. 1.8e 0; Mismatches
                                                                                                                   92
                                                                                                                                                                                                                                                English.
                                                                                                                   ç;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Framework
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Framewrok
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDR-2
                                                                e 186.4; ub ...
i. No. 1.8e-45;
i-t-hes 96;
                                                                                                                    79
                                                                                                                   Ŧ;
                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         region
                                                                                      DB 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of.
                                                                                                                    other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IH21H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IH21H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IH21H7
                                                                    Indels
                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 region region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          heavy
                                                                                       357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N
                                                                  6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of.
                                                                  Gaps
                              61
                                                61
                                                                    ۳,
```

밁

В δÃ 밁 δÃ 밁 Q 밁 δÃ

В δõ

```
RRESULT 1
RAZ50LT 1
RAZ50LT 10-AAZ5
XX AAZ5
XX AAZ5
XX XX Sing
DE DNA
DE DNA
DE DNA
XX Sing
KW Sing
KW myel
XX Unid
XX
                                                                                                                                                                                                                                                                    WPI; 200
P-PSDB;
The invention relates to a therapeutic composition comprising polypeptide. The fusion protein comprises a polypeptide which specifically binds CD38 (e.g., an anti-CD38 antibody), linked polypeptide which specifically binds DNA (e.g., protamine). The polypeptide which specifically binds DNA (e.g., protamine).
                                                                                                                                                                                          e.g.
                                                                                                                          Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   myeloma; myeloid leukaemia; lymphoma; autoimmune disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Single
                                                                                                                                                                                                                        Novel
                                                                                                                                                                                                                                                                                                                                            Lust JA,
                                                                                                                                                                                                                                                                                                                                                                                     (MAYO-) MAYO FOUNDATION
(LUST/) LUST J A.
(DONO/) DONOVAN K A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W09962526-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAZ55925 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                                                                        l fusion polypeptides used for developing products for treating multiple myeloma, amyloidosis, monoclonal gammopathy or leukemia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _ ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagccctacagtcccgactcagcgtcaccaggggacacctccaagagccaattctccctgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caggaaaggcgcttgagtggctaggtggtgtccagtggtgcactaacagcctataaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cctgcactgtctctgggttctcattaaccaactatcatgtgcactgggttcgacagcctc
                                                                                                                                                                                                                                                                    2000-105662/09
)B; AAY69523.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caggaaaaggtctggagtggaggcatgtggggtgatggagacacatcatgtaatt
                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chain variable fragment; scFv; CD38; antibody; HB7 hybridoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     357
                                                                                                                                                                                                                                                                                                                                            Donovan KA
                                                                                                                          Fig 6A-G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     anti-CD38 antibody single chain variable fragment (scFv).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0088277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US12512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
/partial
/product= "Anti-CD38 scFv antibody"
/note= "No initiation or termination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
2..748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA;
                                                                                                                      56pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           specification"
                                                                                                                          English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    termination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               given
       The invention
                             ç
                                                                       a fusion
                             ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
```

```
FTT FTT
                                                                                                                                                                                                                                                                                                         RESULT 15
AAT43807
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                              뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               also provides a DNA sequence encoding a cytotoxic agent which is coperably linked to a cell or tissue-specific transcriptional unit. The ctherapeutic compositions can be used to inhibit the growth of CD38+CC ells. They can be used to inhibit or treat multiple myeloma, primary can look be used for treating B cell lymphomas, B cell specific proliferative compositions (e.g., leukaemias) or hypersensitivity responses, systemic compositivity responses, systemic critematoid arthritis, and antibody or non-antibody mediated autoimmune confidences. The fusion proteins can also be used for detection and confidences. The fusion proteins can also be used for detection and confidences. The fusion proteins can also be used for detection and confidences. The fusion proteins can also be used for detection and confidences. The fusion proteins can also be used for detection and confidences. The fusion proteins can also be used for detection and confidence molecules but have reduced or no immunogenicity. The present surface molecules but have reduced or no immunogenicity. The present compositions represents DNA encoding an anti-CD38 antibody single chain confidence confidence isolated Ig (immunoglobulin) heavy and light chain genes from an anti-CD38 hybridoma confidence confidence in the solated Ig (immunoglobulin) heavy and light chain genes from an anti-CD38 hybridoma confidence confidence in the specification).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 260
                                                                                               11f8 group; hai
systemic lupus
SLE; disease; c
                                                               Synthetic
                                                                                                                                                 Heavy chain;
                                                                                                                                                                                   Anti-DNA antibody 11f8 group heavy chain variable region
                                                                                                                                                                                                                      12-AUG-1997
                                                                                                                                                                                                                                                                                         AAT43807 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 750 BP; 186 A; 184 C; 202 G; 178 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                              375
                                                                                                                                                                                                                                                                                                                                                                                                              362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              302
                                                                                                                                                                                                                                                                                                                                                                                                                                              320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                              _ ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                              gtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtctcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctca
                                                                                                                                                                                                                                                                                                                                                                                                                                             ----acgacgggctatgctatggactactggggccaagggaccacggtcaccgtctcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aaatgaacagtctgcaagctgatgacactgccatatacttctgtgccaaaaccttgatt-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caggaaagggtctggagtggctgggagtgatatggagggtggaagcacagactacaatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aggtccagctgcaggagtcaggacctagcctagtgcagccctcacagcgcctgtccataa
                                                                                                                                                                                                                                                                                                                                                                              376
                                                                                                                                                                                                                                                                                                                                                                                                              363
                                                                                                                                 hairpin; diagnosis; inflammatory glomerulonephritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                 variable region;
                                                                                                 consensus;
                                                                                             erythematosus; screening; treatment;
consensus; putative; ss.
                                                                                                                                                                                                                                                                                         cDNA;
                                                                                                                                                                                                                    entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 186.4;
Pred. No. 2.
                                                                                                                                                 anti-DNA; monoclonal; antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .2e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                    CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
```

CDS

/*tag=

Location/Qualifiers

```
Ş
                                                   В
                                                                         ρy
                                                                                                       망
                                                                                                                             Qy
                                                                                                                                                             В
                                                                                                                                                                                    Q
                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                 Query Match 51.0%;
Best Local Similarity 72.6%;
Matches 268; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence encodes the heavy chain variable region of the group lif8 putative consensus anti-DNA monoclonal antibody (MAb), which has a high affinity for single stranded DNA, low or no affinity for double stranded DNA and specifically binds a DNA hairpin. The MAb can be used diagnose disorders associated with the pathological complexation of DNA, e.g. inflammatory glomerulonephritis and systemic lupus erythematosus. It can also be used to generate reagents to screen for pharmaceutical agents, and treat and/or prevent an above disorder.

The sequence was derived by aligning homologous anti-DNA MAb cDNA, whose sequences have been published, as well as several MAb of other specificities obtained from a database search.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Anti-DNA antibody which specifically binds DNA hairpin -develop prods. for diagnosis and treatment of disorders, glomerulonephritis or systemic lupus erythematosus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Glick
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example; Fig 9; 102pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-MAY-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W09636361-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UNMI ) UNIV MICHIGAN.
                                                                                                                                                                                          178
                                                                                                                                                                                                                     121
                                                   301
                                                                                                         241
                                                                                                                                                               181
                                                                                                                                                                                                                                             121
361
                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                        ctgtcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtc
                                                                                                                                                                                                                                ccaggaaaggcgcttgagtggctaggtggtgt---gtccagtggtgcactaacagcctat
                                                                                                                                                                                                                                                                    1997-011854/01.
                        gtctcctca 363
                                                                                                                                                                          aacacagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctcc
                                                                 ---aatggtgacagtgttccttatggtttggactactggagcccaggactcctactcacc
                                                                                                                                                           aattcggctctcatgtccagactgagcatcagcaaagacaactccaagagccaagttttc
                                                                                                                                                                                                                  ccaggaaagggtctggagtggctgggagtaatatggcctgctggtggaagcacaaattat
                                                   ccttatggtaactacggttactatgctatggactactggggtcaaggaacctcagtcacc
                                                                                                      ttaaaaatgaacagtctgcaaactgatgacacagccatgtactactgtgccagacatctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW07437.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Swanson PC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP; 93 A; 95 C; 92 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95US-0443540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96WO-US07113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "no STOP codon given"
                                                                                                                                                                                                                                                                                                                                                                                Score 185; DB 18;
Pred. No. 4.6e-45;
0; Mismatches 95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    89 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                          Length 369;
                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                useful to e.g.
                                                                                                                                                                                                                                                                                                                                                                                 6;
                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                            354
                                                                                                       300
                                                                                                                                  297
                                                                                                                                                             240
                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                2;
```

Search completed: August 11, 2002, 22:10:19 Job time: 7699 sec

THIS PAGE BLANK (USPTO)

8

4,

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match
Maximum Match
Listing first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run
                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB I
   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq length: 0
seq length: 2000000000
  Query
Match Length
                                                                                             GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1797656 seqs, 10463268293 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   August 11,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us-09-786-015-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      caggtgcagctgcaggagtc.....tcctactcaccgtctcctca 363
                                                                                                                                                                                                                                                                                                                                                                                                        gb_ba:*
gb_htg:*
gb_in:*
                                                                                                                                                                                                                                                                                                                                                        gb_pat:*
gb_ph:*
gb_pl:*
                                                                                                                                                                                                                                                                                                                                                                                      gb_om:*
                                                                                         em_vi:*
em_htg_hum:*
em_htg_inv:*
em_htg_other:*
em_htgo_inv:*
                                                                                                                                                      em_in:*
em_om:*
em_or:*
em_ov:*
em_ov:*
em_ph:*
em_ph:*
em_ph:*
                                                                                                                                                                                                                                                                                                                                             gb_pr:*
                                                                                                                                                                                                                                                                                         gb_un:*
gb_v1:*
                                                                                                                                                                                                                                                                      em_ba:*
em_fun:*
                                                                                                                                                                                                                                                                                                                        gb_ro:*
                                                                                                                                                                                                                                                                                                               gb_sy:*
                                                                                                                                              em_un:*
                                                                                                                                                                                                                                                             em_hum: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2002, 19:46:55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 4.5 (c) 1993 - 2000 Comp
  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                            100%
45 St
  Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             summaries
                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Search time 1984.69 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (without alignments)
3827.466 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3595312
Description
```

w	23	31.	31.	31	31.	- 1	233.4	٠ د د		۰ د د	٠ د	23	ω	ω	ω		23	38.	39.	39.		41	2	42.	4	24		4 4	4	. 4	46.		24		49.	49.	ū	5	ū	25		65
į.	Ü	ú	ω	ω ·	ω.	ِ د	54.3	٠.	- :	٠.	4.	4.	4				Ģ.	Ġ	6	6	6	6	6		6	6	7:	۷.	١.`	7.	7.	7.	ω.	œ	ω.	8	φ	9	9	9	0	ω.
80	51	66	9	55	30	360	1923	0 4	λ (2	л \ Л С	90	47	36	57	60	50	81	52	51	60	57	69	62	S	30	ω i	5 2	2 6	0 0	9	58	47	49	66	61	69	8	56	50	26	56	(J
BTU497	Þ	AF1726	TTR320	OAVR16	OAVGE7	AF1	4 OAIGMU	ONVENTO	OAVBAI	CHANG																			4 AFI/25/U									OAVRB	OAVRB6I	OAVRB11	OAVRA1	4 OAVRA17IG
49782 Bos taurus	F097208 Bos tau	172660 Ovis ari	320196 Tursic	9163 O.aries	9181 O.aries	172664 Ovis	i d	olar o artes	9177 O.G.	9174 Olarics	0036 O.aries	9188 O.aries	9186 O.arie	9167 O.aries	172665 Ovis a	9168 O.aries n	2916 B.taurus	9173 O.aries	172659 Ovis	172671 Ovis	172666 Ovis	9169 O.ari	5202 Bos taur	9161 0.	9180 O.aries	172668 Ovis a	9165 O.aries	9192 0	1/26/0 OVIS 8	172667 Ovis ar	9164 O.aries	9171 O.aries	9166 O.a:	172674 Ovis	49156 O.a.	F172680 Ovis	49170 O.aries	49159 O.aries	49172 O.aries	192 O.a.	49175 O.aries	4917

ALIGNMENTS

REFERENCE AUTHORS TITLE REFERENCE AUTHORS TITLE JOURNAL RESULT 1 OAVRA17IG LOCUS SOURCE ORGANISM ACCESSION VERSION KEYWORDS DEFINITION Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Caprinae; Ovis.

1 (bases 1 to 456)

Dufour, V.

Direct Submission

Submitted (27-APR-1995) Dufour V., Faculte des Sciences, CNRS URA 1172, IBMIG, 40, avenue du Recteur Pineau, Poitiers, FRANCE, 86022 (bases 1 to 456)

Dufour, V., Malinge, S. and Nau, F.

The sheep Ig variable region repertoire consists of a single VH family 456 bp O.aries mRNA for immunoglobulin (clone VRA17). sheep. Ovis aries diversity region; immunoglobulin; joining region; variable region. Z49176.1 GI:794120 Ē immunoglobulin heavy chain; mRNA line heavy chain des Sciences, CNRS URA Poitiers, FRANCE, 86022 linear MAM 04-FEB-1998 main variable region

```
RESULT 2
OAVRA10IG
LOCUS
                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                               Qy
                                                                                                                                                                                     δÃ
                                                                                                                                                                                                       В
                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
KEYWORDS
          VERSION
                   ACCESSION
                                    DEFINITION
                                                                                             밁
                                                                                                             δõ
                                                                                                                               В
                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                          D_segment
                                                                                                                                                                                                                                                                                                                                                 Local 302;
                                                                                             454
                                                                                                              361
                                                                                                                                394
                                                                                                                                                  301
                                                                                                                                                                     334
                                                                                                                                                                                       241
                                                                                                                                                                                                         274
                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                              214
                                                                                                                                                                                                                                                                                 154
                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                      94
                                                                                                                                                                                                                                                                                                                              1 caggtgcagctgcaggagtcgggacccagctggtgaagccctcacagaccctctcccctc
                                                                                                                                                                  ACCTGCACGGTCTCTGGATTCTCATTAACCAGCAATGCTGTAGACTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                        acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                     CAGGTGCGGCTGCAGGAGTCGGGACCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCTC
                                                                                                              tca 363
                                                                                                                                                                                                                                                       TCA 456
                                                                                                                                AGTGGCTGTGCTTGTGGTTCTATCGACTACTGGGGCCCAGGACTCCTGGTCACCGTCTCC
                                                                                                                                                                                                                                             CCAGGAAAGGTGCCGGAGTGGCTTGGTGGTGAAGCAGTGATGGAAGCACATACTATAAC
       (clone VRA10).
Z49175
Z49175.1 GI:794118
                                    OAVRA10IG 456 bp O.aries mRNA for immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J. Immunol. 156 (6), 96310953
diversity region; immunoglobulin;
                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="VH"
37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="VH"
88. .456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MNPLWTLLEVLSAPRGVLSQVRLQESGPSLVKPSQTLSLTCTVS
GFSLTSNAVDWVRQAPGKVPEWLGGVSSDGSTYYNPALKSRRSITRDASKSQVSLSLS
SVTTEDAAVYYCARTWYSGCACGSIDYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                            /gene="VH"
/note="D-JH region"
144 c 127 g
                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="VH region" 385. .456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/product="VH region precursor"
/protein_id="CAA89045.1"
/db_xref="GI:794121"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /rearranged
37. .456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VRa17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene≖"VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .456
                                                                                                                                                                                                                                                                                                                                                                 73.1%;
83.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2163-2170 (1996)
                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                       Score 265.4; DB 4
Pred. No. 1.1e-69;
0; Mismatches 61
                                     ПE
                                                                                                                                                                                                                                                                                                                                                                                                               97
immunoglobulin heavy
                                             mRNA
                                     heavy
                                                                                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                                                                                                                                                                                                                                                         61;
                                    linear
chain var
                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                         Length
                                    ear MAM
variable
                                                                                                                                                                                                                                                                                                                                                                           456;
                                                                                                                                                                                                                                                                                                                                                        0;
                                             04-FEB-1998
                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                               453
                                                                                                                                                                    393
                                                                                                                                                                                                        333
                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                            273
                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                    153
                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                 213
                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
      Ω
                                       δÃ
                                                                             δÃ
                                                                                                   Вþ
                                                                                                                 QY
                                                                                                                                       В
                                                                                                                                                       QY
                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                          В
                                                             Вþ
                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                Query Match
Best Local S
Matches 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                  D_segment
                                                                                                                                                                                                                                                                                                                            V_region
                                                                                                                                                                                                                                                                                                                                             sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
        301
                           334
                                                                                                                                        154
                                            241
                                                               274
                                                                                 181
                                                                                                    214
                                                                                                                    121
                                                                                                                                                         61
                                                                                                                                                                            94
                                                                                                                                                                                                                 295;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96310953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tamily
                                                                                                                                                                                                                                                                       100
```

```
1 caggtgcagctgcaggagtcgggacccagcttggtgaagccctcacagaccctctcccctc
                                             ACCTGCACGGTCTCTGGATTCTCATTAACCAGCAATAATGTAGGCTGGGTCCGCCAGGCT
ggtgacagtgttccttatggttttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                               acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                               CAGGTGCAGCTGGAGGAGTCGGGACCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCTC
                                                                                                                                                                               CCAGGAAAGGCACTGGAGTGGGTTGGTGACATATATGCTGGTGGAAGTAAAGAATATAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   joining region; variable region. sheep.
Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The sheep Ig variable region repertoire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 456)
Dufour, V., Malinge, S. and Nau, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (27-APR-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dufour, V.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1172, IBMIG, 40, avenue
                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 456)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mmunol. 156 (6), 2163-2170 (1996)
                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="VH"
/product="VH
385. .456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="VH"
37. .>456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="VH region precursor"
/protein_id="CAA89044.1"
/protein_id="CAA89044.1"
/db_xref="G1:794119"
/ta_sref="G1:794119"
/ta_sref="MMPLWTLLFVLSAPRGVLSQVQLEESGPSLVKPSQTLSLTCTVS
GFSLTSNNVGWVRQAPGKALEWVGDIYAGGSKEYSPALKPRLSITRDTSKSQVSLSLS
SVTTEDTAVYYCARDQPSSGVFGDYDYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9940"
/clone="VRA10"
/tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="D-JH region"
136 c 125 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rearranged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                             70.0%;
                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                             Score 254.2; DB 4; Pred. No. 2.7e-66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dufour V.,
du Recteur
                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Recteur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pineau,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Faculte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        consists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        des Sciences, CNRS URA
Poitiers, FRANCE, 86022
                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of.
                                                                                                                                                                                                                                                                                                                                                                                                            456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                 393
                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                               153
                                                                                                                                                                                                                                                                                                                                            60
                 360
                                                                                                              333
                                                                                                                                               240
                                                                                                                                                                               273
                                                                                                                                                                                                                                              213
                                                                                                                                                                                                                                                                                                                                                                            0,
```

354

357 294 297 240 237

```
REFERENCE
AUTHORS
TITLE
                                밁
                                                       Ş
                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
 S
                                                                                                                         δ
                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                   D_segment
                                                                                                                                                                                                                                                                                                                                              V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                             sig_peptide
                                  118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 454
 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              394
                                                              61
                                                                                               88
                                                                                           ccaggaaaggcgcttgagtggctaggtggtgtccagtggtgcactaacagcctataac 180
                                               acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCA 456
                               ACCTGCACGGTCTCTGGATTCTCATTAACCAGCAATGCTGTAGGCTGGGTCCGCCAGGCT 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTAGTGGCGTGTTTGGTGATTACGACTACTGGGGCCCCAGGACTACTGGTCACCGTCTCC 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Z49192.1 GI:794127
diversity region; immunoglobulin;
joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OAVRB11IG 426 bp mRNA linear MAM 04-FEB O.aries mRNA for immunoglobulin mu heavy chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (27-APR-1995) Dufour V.,
1172, IBMIG, 40, avenue du Recteur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.

1 (bases 1 to 426)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 (bases 1 to 426)
Dufour, V. and Nau, F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sheep
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dufour, V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (clone VRB11).
                                                                                                                                                                        Similarity
                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                     87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunoglobulin mu heavy chain variable region sequence
                                                                                                                                                                                                                                                    /gene="VH"
/note="D-JH
128 c
                                                                                                                                                                                                                                                                                                   /product="VH region"
349. .426
                                                                                                                                                                                                                                                                                                                                                                                            /translation="MNPLWTLLEVLSAPRGYLSQYRLQESGPSLYKSSQTLSLTCTVS
GFSLTSNAVGWVRQAPGKAPEWVAGIHNSGSIGYNPALKSRLSITRDTSKSQVSLSLS
SVTAEDTPMYYCARDYSGCGRSAVACIDYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                 /gene="VH"
52. .426
                                                                                                                                                                                                                                                                                                                                 /gene-"VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/product="VH region precursor"
/protein_id="cAA89051.1"
/db_xref="GI:794128"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="VRB11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'gene≖"VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rearranged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .>426
                                                                                                                                                                        69.1%;
                                                                                                                                                                                                                                                    region"
116 g
                                                                                                                                                         Score 251; DB 4;
Pred. No. 2.6e-65;
0; Mismatches 60;
                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Faculte
Pineau,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunoglobulin
                                                                                                                                                                                     Length 426;
                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             des Sciences, CNRS URA Poitiers, FRANCE, 86022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAM 04-FEB-1998
                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chain;
                                                                                                                                                        Gaps
                                                                                                                                                         ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
OAVRB6IG
 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                   CDS
                                                              D_segment
                                                                                                          V_region
                                                                                                                                         sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 tcactgagcagcgtgactactgaggacacggccatttactactgtgcga-----aatct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355 gtctcctca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               238 CCAGCCCTTAAGTCCCGGCTCAGCATCACCAGGGACACCTCCAAGAGTCAAGTCTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gtcaatggtgacagtgttccttatggtttggactactggagcccaggactcctactcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCTCCTCA 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGATGTGGTCGTAGTGCTTGCTTGTATCGACTACTGGGGCCCCAGGACTCCTGGTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCACTGAGCAGCGTGACAGCTGAGGACACGCCCATGTACTACTGTGCAAGAGATTATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2491/2.1 GI:794137
249172.1 GI:794137
diversity region; immunoglobulin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (27-APR 1995) Dufour V., Faculte des Sciences, CNRS 1172, IBMIG, 40, avenue du Recteur Pineau, Poitiers, FRANCE, 2 (bases 1 to 450)
Dufour,V., Malinge,S. and Nau,F.
The sheep Ig variable region repertoire consists of a single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OAVRB6IG 450 bp O.aries mRNA for immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                           96310953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dufour, V.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               249172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (clone VRB6).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :атту
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 450)
                                                                                                                                                                                                                                                                                                                                                                                                                                                       mmunol. 156 (6), 2163-2170 (1996)
                  99
         /gene="VH"
/note="D-JH region"
/note="D-JH region"
                  <sub>D</sub>
                                                                                                          /gene="VH"
82. .450
                                                                                                                                       /Godon_start=1
/product="VH region precursor"
/protein_id="CAA89041.1"
/db_xref="GI:794138"
/translation="MNPLWTLLFVLSAPRGVLSQVQLQESGPSLVKPSQTLSLTCTVS
/translation="MNPLWTLLFVLSAPRGVLYNAALKSRLSITRDTSKSQVSLSLS
SVTTEDTAVYWSATCLYRSCHTNGHAYWSPGLLVTVSS"
31. .81
                                                              /product="VH
379. .450
                                                                                           /gene="VH"
                                                                                                                                                                                                                                                                                           /gene="VH"
                                                                                                                                                                                                                                                                                                                                              /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                          /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                 /gene="VH"
                                                                                                                                                                                                                                                                                                                                                              /clone="VRB6"
                                                                                                                                                                                                                                                                                                                               rearranged/
                                                                           region"
                96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ear MAM 04-FEB-1998
variable region
```

heavy

CNRS URA

86022

```
RESULT 5
                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                   JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                          JOURNAL
                                                               gene
                                       CDS
                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctcccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ggtgacagtgttccttatggttttggactactggagcccaggactcctactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccaggaaaggcgcttgagtggctaggtgtgtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGTGCAGCTGCAGGAGTCGGGTCCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCCTC 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCACTGAGCAGCGTGACAACAGAGGACACGGCCGTGTACTGGAGTGCAACCTGCCTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCTGCACGGTCTCTGGATTCTCATTAAGCAGCGATGCTGTAAACTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGTCTTGTCATACTAATGGACACGCCTACTGGAGCCCAGGACTCCTGGTCACCGTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  293;
                                                                                                                                                                                                                         Dufour,V.
Direct Submission
Direct Submission
Submitted (27-APR-1995) Dufour V., Faculte des Sciences, CNRS
Submitted (40, avenue du Recteur Pineau, Poitiers, FRANCE,
                                                                                                                                                                                                                                                                                                                                                                                                                 456 bp O.aries mRNA for immunoglobulin (clone VRB15).
                                                                                                                                                                                                                                                                                                                                                          sheep.
                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                               Ovis aries
                                                                                                                                                                                                                                                                                                                                                                      Z49159.1 GI:794131
diversity region; immunoglobulin;
joining region; variable region.
                                                                                                                                                                                                      Dufour, V., Malinge, S. and Nau, F. The sheep Ig variable region repertoire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      363
                                                                                                                                                                                                                                                                                            (bases 1 to 456)
                                                                                                                                                                               Immunol. 156 (6),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
/gene="VH"
/codon_start=1
/product="VH re
                                    /gene="VH"
37. .>456
                                                                /rearranged
37. .456
                                                                                                  /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VRB15"
                                                                                                                                                    Location/Qualifiers
                                                                                        /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            69.1%;
80.7%;
                                                                                                                                                                               2163-2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 251; DB 4; Lengum au
Pred. No. 2.6e-65;
"" wismatches 70; Indels
 region
 precursor"
                                                                                                                                                                               (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                   ı⊒
                                                                                                                                                                                                                                                                                                                                                                                   immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                   heavy chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                        consists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                        of
                                                                                                                                                                                                                                                                                                                      Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                 heavy
                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAM
                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                                   chain,
                                                                                                                                                                                                                                                                                                                                                                                                                                               04-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                        CNRS URA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

```
RESULT 6
OAVRA4IG
LOCUS
DEFINITION
                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                        Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                        REFERENCE
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                         KEYWORDS
                                                                             REFERENCE
                                                                                                                                                                    VERSION
                                                                                                                                                                              ACCESSION
                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                           JOURNAL
            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D_segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sig_peptide
                                                                                                                                                                                                                                                                      454
                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                               334
                                                                                                                                                                                                                                                                                                                                                                     241 tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                     274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           154
                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                               214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
nes 293; Conserv
                                                                                                                                                                                                                                                                      TCA
                                                                                                                                                                                                                                                                                           tca
                                                                                                                                                                                                                                                                                                                                                                                                                acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                               TCACTGAGCAGCGTTACAACTGAGGACACGGCCGTGTACTACTGTGCAAGAGGGGGGTATT
                                                                                                                                                                                                                                                                                                                                                                                                     CCGGCCCTGAAATCCCGGCTCAGCATCTCCAGGGACACCTCCAAGAGCCAAGTCTCCCTG
                                                                                                                                                                                                   OAVRA4IG 458 bp O.aries mRNA for immunoglobulin
                                                                                                                                           Z49170.1 GI:794125
diversity region; immunoglobulin;
joining region; variable region.
The sheep Ig variable
         2 (bases 1 to 458)
Dufour, V., Malinge, S. and Nau, F.
                                         Direct Submission
Submitted (27-APR-1995)
                                                                Dufour, V.
                                                                            Bovidae; Caprinae; 1 (bases 1 to 458)
                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                         Ovis aries
                                                                                                                                  sheep.
                                                                                                                                                                               249170
                                1172, IBMIG, 40, avenue
                                                                                                                                                                                          (clone VRA4).
                                                                                                                                                                                                                                                                                          363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="VH"
/product="VH
385..456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="VH"
88. .456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MNPLWTLLEVLSAPRGVLSQVQLQGSGPSLVKPSQTLELTCTVS
GFSLTSYAVNWVRQAPGKALEWVGNILNDGNTYYNPALKSRLSISRDTSKSQVSLSLS
SVTTEDTAVYYCARGGIYYSTWTGINYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="VH"
/note="D-JH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /protein_id="CAA89028.1"
/db_xref="GI:794132"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 O
                                                                                       Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               f region"
112 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 251; DB 4;
Pred. No. 2.6e-65;
0; Mismatches 70;
region repertoire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          region"
                                Dufour V.,
du Recteur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106
                                                                                                                                                                                                    ∄u
                                Faculte Pineau,
                                                                                                                                                        immunoglobulin
                                                                                                                                                                                                   mRNA
heavy
consists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 456;
                                                                                                                                                                                                    chain
                                des Sciences, CNR:
Poitiers, FRANCE,
                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
of.
                                                                                                   Pecora; Bovoidea;
                                                                                                                                                        heavy
ø
                                                                                                                                                                                                             MAM 04-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
single
                                                                                                                                                        chain;
                                           CNRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                 453
                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                               273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      153
                                                                                                                                                                                                                                                                                                                                                          393
                                                                                                                                                                                                                                                                                                                                                                                                     333
                                                                                                                                                                                                                                                                                                                                                                                                                          240
 Η
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                  RESULT
AF172680
                                                                                                                                Š
                                                                                                                                                                            Ş
                                                                                                                                                                                                                    δõ
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                 ρy
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                              밁
                                                                                                                                                         В
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                        COCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             D_segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sig_peptide
                                                                                                              456
                                                                                                                                    361
                                                                                                                                                          396
                                                                                                                                                                             301
                                                                                                                                                                                                     336
                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                 276
                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                            216
                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                       156
                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                96
                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                          1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctcccctc
                                                                                                                                                      tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                        acagccctacagtcccgactcagcgtcaccagggacacctccaagagcccaattctccctg
                                                                                                                                                                                                                                                                                                     ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaaccagcctataac
                                                                                                                                                                                                                                                                                                                                                acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                                                                               CAGGTGCGACTGCAGGAGTCGGGACCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCTC
                                                                                                              TCA
                                                                                                                                    tca 363
                                                                                                                                                                                                                                             CCGGCCCTAATGTCCCGGCTCAGCATCACCAGGGACAGCTCCAAGAGCCAGGTCTCCCTG
                                                                                                                                                                                                                                                                                         CCAGGAAAGGTGCCGGAATGGCTTGGTGGTATTGCCACTGGTGGAAGCACATTCTATAAG
                                                                                                                                                                                                                                                                                                                                     ACCTGCACGGTTTCTGGATTCTCATTAACCAGCAATGCTGTACACTGGGTCCGCCAGGCT
                                                                                                                                                                                                    TCACTGAGCAGCGTAACAAGTGACGACACGGCCGTGTACTACTGTGCAAGAGATATCGAT
                                AF172680 369 bp mRNA linear MAM 01-SEP-1
Ovis aries clone 146 immunoglobulin heavy chain precursor (IGHV)
mRNA, partial cds.
            AF172680.1
                       AF172680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96310953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Immunol. 156 (6),
                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /genem"VH"
90. .458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="VH"
/product="VH region"
387. .458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MNPLWTLLFVLSAPRGVLSQVRLQESGPSLVKPSQTLSLTCTVS
GFSLTSNAVHWVRQAPGKVPEWLGGIATGGSTFYKPALMSRLSTTRDSSKSQVSLSLS
SVTSDDTAVYYCARDIDGTVNVWDIETWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene-"VH"
39. .>458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/product="VH region precursor"
/protein id="CAA89039.1"
/db_xref="GI:794126"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VRA4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="D-JH
140 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rearranged
39. .458
            GI:5815228
                                                                                                                                                                                                                                                                                                                                                                                                                                      69.1%;
80.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                        Score 251; DB 4; Ler
Pred. No. 2.6e-65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          region"
123 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2163-2170 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98
                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 458;
                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                      MAM 01-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                        275
                                                                                                                                                                                                                                                                                                                                                                                155
                                                                                                                                                         455
                                                                                                                                                                             360
                                                                                                                                                                                                    395
                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                             335
                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
밁
                 Qy
                                        В
                                                            Qy
                                                                                     밁
                                                                                                       Ş
                                                                                                                                멍
                                                                                                                                                    δÃ
                                                                                                                                                                             밁
                                                                                                                                                                                               Qy
                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
361
                                         301
                                                               301
                                                                                                           241
                                                                                                                                 181
                                                                                                                                                       181
                                                                                                                                                                             121
                                                                                                                                                                                                121
                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                  61 acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                              1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctcccctc
                                                                                                                                                                                                                                                                  1 CAGGTGCAACTGCAGGAGTCGGGACCCAGCCTGATGAAGCCCTCACAGACCCTCTCCCTC
                                                                                                                               GTCTCCTCA
            gtctcctca 363
                                                                                                                                                                           CCAGGAAAGGCACTGGAGTGGGTTGGTGCCATATATAGTGATGGAAGTGCATCCTATAAC
                                                                                                                                                                                                                        ACCTGCTCGGTCTCTGGATTCTCATTAACCAGCTATAGTGTAGTCTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                              302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sheep.
Ovis aries
                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                               78
                                                                                                                                                                                                                                                                                                                        68.7%;
```

Score 249.4; DB 4; Pred. No. 7.9e-65; 0; Mismatches 61;

Indels Length

Gaps

۲;

60

360 354 300

240 240 180

300

180 120

369; σ,

```
l (bases 1 to 369)
White,G.P., Meeusen,E.N.T. and Newton,S.E.
A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal unpublished
(bases 1 to 369)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (26-JUL-1999) School of Veterinary Science, The Center for Animal Blotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 (bases 1 to 369)
White, G.P., Meeusen, E.N.T. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
/translation="QVQLQESGPSLMKPSQTLSLTCSVSGFSLTSYSVVWVRQAPGKA
LEWVGAIYSDGSASYNPALKSRLSVTRDTSKSQVSLSLSSVTTEDTAVYYCARDRFSV
YGHAYLSIDYWGPGLLVYVSS"
112 c 96 g 83 t
                                                                                                         /gene="IGHY"
/codon_start=1
/codon_start=1
/product='inmunoglobulin heavy chain
/protein_id="AAD52606.1"
/db_xref="GI:5815229"
                                                                                                                                                                                                                                        /gene="IGHV"
<1. .>369
                                                                                                                                                                                                                                                                                                                                                                  contortus"
                                                                                                                                                                                                                                                                                                               /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="abomasal lymph node"
/note="isolated from animals infected with Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="146"
                                                                                                                                                                                                                                                                                                 . 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Newton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                          precursor"
```

```
RESULT
OAVR4IG
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
Qγ
                      B
                                           Qy
                                                                  Вр
                                                                                        δÃ
                                                                                                                 밁
                                                                                                                                  Ş
                                                                                                                                                               밁
                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                      sig_peptide 
V_region
                                                                                                                                                                                                                                                                                                                                                                                                  D_segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
 358
                        396
                                             301
                                                                    336
                                                                                          241
                                                                                                                  276
                                                                                                                                        181
                                                                                                                                                                216
                                                                                                                                                                                                              156
                                                                                                                                                                                      121
                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                          96
                                                                                                                                                                                                                                                                    1 caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc
                     acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                            acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                              tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                CCGGCCCTGAAATCCCGGATCAGCATCACCAGGGACACCTCCAAGAGCCAAGTCTCCCTG
                                                                                                                                                              ACCTGCACGGTCTCTGGATTCTCATTAAGCAGCAATTCTATTATCTGGGTCCGCCAGGCT
                                                                                                                                                                                                                                                        CAGGTGCAGCTGCAGGAGTCGGGACCCCCGCCTGGTGAAGCCCTCACAGACCCTCTCCCCTC
 tcctca
                                                                    TCACTGAGCAGCGTGACAACTGAGGACACGGCCATGTACTACTGTGGAAAATATCGTAAT
                                                                                                                                                                                                                                                                                                       300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      joining region; immunoglobulin; sheep.
Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OAVR4IG 461 bp O-aries mRNA for immunoglobulin (clone VR4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1172, IBMIG, 40, avenue du Recte 2 (bases 1 to 461)
Dufour, V., Malinge, S. and Nau, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Z49156.1 GI:794113
diversity region; in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96310953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The sheep Ig variable region repertoire consists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (27-APR-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dutour, V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     family
                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Immunol. 156 (6),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 461)
                                                                                                                                                                                                                                                                                                                                                                            100
                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="spleen"
/clone="VR4"
39. 90
90. 461
                                                                                                                                                                                                                                                                                                                                                                                                  /product="VH region" 387. .461
                                                                                                                                                                                                                                                                                                                                                                         /note="D-JH region"
143 c 118 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rearranged
                                                                                                                                                                                                                                                                                                                  68.7%;
82.0%;
                                                                                                                                                                                                                                                                                                                                                                                                .461
                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2163-2170 (1996)
                                                                                                                                                                                                                                                                                                                  Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dufour V., Faculte du Recteur Pineau,
                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                  249.2; DB
No. 9e-65;
                                                                                                                                                                                                                                                                                                                                                                            100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        킖
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
heavy
                                                                                                                                                                                                                                                                                                                                                                           H
                                                                                                                                                                                                                                                                                                                             DΒ
                                                                                                                                                                                                                                                                                                      63;
                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               des Sciences, CNRS URA Poitiers, FRANCE, 86022
                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ear MAM 04-FEB-1998 variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of a single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          heavy
                                                                                                                                                                                                                                                                                                                              461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                      ω
``
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chain
                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovoidea;
                                                                                         300
                                                                                                                                     240
                                                                                                                                                                                                                                                                               60
                                             357
                                                                   395
                                                                                                                                                               275
                                                                                                                                                                                      180
                                                                                                                                                                                                           215
                                                                                                                                                                                                                                                        155
                                                                                                                                                                                                                                                                                                      1;
```

```
RESULT
AF172674
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
g
                       Qy
                                                     DЬ
                                                                           QΥ
                                                                                                           DЪ
                                                                                                                                    οy
                                                                                                                                                                 밁
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                               V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      456
                                                                                121
181
                           181
                                                     121
                                                                                                           61
                                                                                                                                      61
                                                                                                                                                                   ب
                                                                                                                                                                caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc 60
             acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                    GCGGCCCTGAAATCCCGGCTCAGCATCACCAGGGACACCTCCAAGAGCCAAGTCTCCCTG
                                                     CCAGGAAAGGTGCCGGAGTGGCTTGGTAGTATCAGCAGTGGTGGAAGCACATACTATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sheep.
Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (26-JUL-1999) School of Veterinary for Animal Blotechnology, The University of Melbourne, Victoria 3052, Australia Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library abomasal lymph node of sheep infected with the gastroi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ari/2674 366 bp
Ovis aries clone 92 immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 366) White, G.P., Meeusen, E.N.T. and Newton, S.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyia; Ruminantia; Pecora; Bovoidea Bovidae; Caprinae; Ovis.

1 (bases 1 to 366)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF172674
AF172674.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA, partial cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF172674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      461
                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                            þ
                                                                                                                                                                                                                                                                                                                        /translation="QVQLQESGPSLVKPSQTLSLTCTVSGFSLTYNAVHWVRQAPGKVPEWLGSISSGGSTYYNAALKSRLSITRDTSKSQVSLSLSRVTTEDSAVYYCASDDGDGVVDISYIHYWGPGLLYTVSS"
                                                                                                                                                                                                                                                                                                                                                                /gene="IGHV"
/codon_start=1
/product='immunoglobulin heavy chain precursor"
/protein_id="AAD52601.1"
/db_xref="GI:5815218"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contortus"
                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="IGHV"
<1. .>366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="abomasal lymph node"
/note="isolated from animals infected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="92"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GI:5815217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .366
                                                                                                                                                                                                                                                                                                            111 c
                                                                                                                                                                                                                                       68.2%;
81.7%;
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                         Score 247.6; DB 4
Pred. No. 2.8e-64;
0; Mismatches 64
                                                                                                                                                                                                                                                                                                            97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  366
                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                            ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA line
heavy chain
                                                                                                                                                                                                                                                     DB 4;
                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Melbourne,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        with Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 library from the gastrointestinal
                                                                                                                                                                                                                                                     366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MAM 01-SEP-1999
                                                                                                                                                                                                                         ω;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The Center, Parkville
                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (IGHV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bovoidea;
240
                          240
                                                    180
                                                                                180
                                                                                                                                                                                                                         1;
```

240

275 180 215

335

446 360 395 120

155

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
                              Matches
                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                             D_segment
                                                                                                                                                                                                        V_region
                                                                                                                                                                                                                                   sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTCA 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGGTGTTGTCGATATATCCTATATCCACTACTGGGGCCCCAGGACTCCTGGTCACCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aatggtgacagtgttccttatggttttggactactggagcccaggactcctactcacccgtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tcctca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCACTGAGCCGCGTGACAACTGAGGACTCGGCCGTGTACTACTGTGCAAGCGATGATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tcactgagcagcgtgactactgaggacacggccatttactactgtgcga---aatctgtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OAVR21IG 449 bp O.aries mRNA for immunoglobulin (clone VR21).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 diversity region; immunoglobulin; joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 449)
Dufour, V., Malinge, S. and Nau, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (27-APR-1995) 1172, IBMIG, 40, avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              249166.1 GI:794107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                249166
                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                camıly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 449)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Immunol. 156 (6), 2163-2170 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sheep Ig variable region repertoire consists
                                                                                                                    93
                                                                                                                                                                                                        /gene="VH"
90. .449
                                                                                                                                                                                                                                                 /translation="MNPLWTPLFVLSAPRGVLSQVRLQESGPSLVKPSQTLSLTCTVS
GFSLTTYSVGWVRQAPGKALEWLGGIENDGCAGYHPALKSRLSITRDTSKSQVSLSLS
SVTSEDTAMYYCVRSFFGGKYWGYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                    39. .>449
/gene="VH"
                                                                                                                   /note="D-JH region"
138 c 123 g
                                                                                                                                                            /product="VH region" 387. .449
                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VR21"
                                                                                                                                                                                         /gene="VH"
                                                                                                                                                                                                                                                                                            /codon_start=1
/product="VH region precursor"
/protein id="CAAB9035.1"
/db_xref="GI:794108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                              /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                 /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                               rearranged/
                                          68.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    avenue
                           Score 247; DB Pred. No. 4.2e 0; Mismatches
                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dufour V., Faculte du Recteur Pineau,
                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
a
                                                                                                                   95
                              .2e-64;
les 55;
                                                         DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunoglobulin heavy
                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                        Length 449;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chain
                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    des Sciences,
Poitiers, FRAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ear MAM 04-FEB-1998
variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               res, CNRS URA
                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                              1;
                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 1
OAVRB1IG
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                          gene
                                                                                                                                              CDS
            sig_peptide
                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tca 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggtgacagtgttccttatggtttggactactggagcccaggactccttactcaccgtctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGCCCTTAAGTCCCGGCTCAGCATCACCAGGGACACCTCCAAGAGCCAAGTCTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTGGAA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCACTGAGCAGCGTGACAAGTGAGGACACGGCCATGTACTACTGTGTGAGAAGTTTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGGAAAGGCGCTGGAGTGGCTTGGTGGTATAGAAAATGATGGGATGTGCAGGCTATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ccaggaaaggcgcttgagtggctaggtgtgtgtccagtggtgcactaaccagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Z49171.1 GI:794133
diversity region; immunoglobulin;
joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OAVRBIIG 447 bp mRNA linear MAM 04-FEB-1998
Olaries mRNA for immunoglobulin mu heavy chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Rammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ovis aries
                                                                                                                                                                                                                                                                                             96310953
                                                                                                                                                                                                                                                                                                                                     Dufour, V., Malinge, S. and Nau, F. The sheep Ig variable region repertoire
                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
Submitted (27-APR-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                             Dufour, V
                                                                                                                                                                                                                                                                                                                                                                 1172, IBMIG, 40, avenue (bases 1 to 447)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (clone VRB1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          449
                                                                                                                                                                                                                                                                                                        Immunol. 156 (6), 2163-2170 (1996)
                                    /codon_start=1
/product="/H region precursor"
/protein_id="CaA89040.1"
/db_xref="01:794134"
/translation="MNPLWTLLFVLSAPRGVLSQVRLQESGPSLVKPSQTLSLTCTVS
GESLTSYGVANVRQAPGKALEWLGGINRDGKTNYDPAFQSRLSITRDTSKSQVSLSLS
             SVTTDDTAVYYCTEIAYYGKFEIYSWGPGLLVTVSS"
34. .84
                                                                                                                                                                          /rearranged
34..447
                                                                                                                                                                                                                    /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VRB1"
/gene="VH"
                                                                                                                              /gene="VH"
                                                                                                                                                       /gene="VH"
                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                       /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATACTGGGGCTACTGGGGCCCAGGACTCCTAGTCACCGTCTCC
                                                                                                                                                                                                                                                                                                                                                                                 Dufour V., Faculte du Recteur Pineau,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             immunoglobulin
                                                                                                                                                                                                                                                                                                                                        consists
                                                                                                                                                                                                                                                                                                                                                                                  des Sciences, CNR
Poitiers, FRANCE,
                                                                                                                                                                                                                                                                                                                                        of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            heavy
                                                                                                                                                                                                                                                                                                                                      single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain;
                                                                                                                                                                                                                                                                                                                                                                                  CNRS URA
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                RESULT 1
OAVR12IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                         Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                          δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                            FEATURES
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                        Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 298
                                                    JOURNAL MEDLINE
                                                                                                                            JOURNAL
                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D_segment
                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    V_region
                                                                                                                                                                                                                                                                                                                                                                                    385
                                                                                                                                                                                                                                                                                                                                                                                                                            331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151
                                                                                                                                                                                                                                                                                                                                            445
                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -tca
                                                                                                                                                                                                                                                                                                                                            TCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              acagccctacagtcccgactcagcgtcaccaggggacacctccaagagccaattctcccttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGGAAAGGCGCTAGAGTGGCTTGGTGGTATATGGAGGGATGGAAAGACAAACTATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ccaggaaaggcgcttgagtggctaggtgtgtgtccagtggtgcactaacagcctataac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGCCTTTCAGTCCCGACTCAGCATCACTAGGGACACCTCCAAGAGCCAGGTCTCCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                          TCACTGAGCAGCGTGACAACTGATGATACGGCCGTGTACTACTGT----ACTGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity
298; Conserv
                                                                                                    Direct Submission
Submitted (27-APR-1995)
1172, IBMIG, 40, avenue
2 (bases 1 to 458)
                                                                                                                                                                                                             sheep.
                                                    96310953
                                                                                 Dufour, V., Malinge, S. and Nau, F. The sheep Ig variable region rep
                                                                                                                                                Dufour, V.
                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.

1 (bases 1 to 458)
                                                                                                                                                                                                   Ovis aries
                                                                                                                                                                                                                       Z49164.1 GI:794093
diversity region; immunoglobulin;
joining region; variable region.
                                                                                                                                                                                                                                                                          OAVR12IG 458 bp O.aries mRNA for immunoglobulin
                                                                                                                                                                                                                                                         249164
                                                                                                                                                                                                                                                                  clone VR12).
                                                                                                                                                                                                                                                                                                                                                               363
                                                                                                                                                                                                                                                                                                                                            447
                                                              Immunol. 156 (6),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     85. .447
/gene="vH"
/product="vH region"
382. .447
/gene="vH"
/note="D-JH region"
a 137 c 116 g
/organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VR12"
                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 246.6;
Pred. No. 5.6e
0; Mismatches
                                                              2163-2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              region"
                                                                                                                 Dufour V.,
du Recteur
                                                                                  repertoire
                                                              (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5; DB 4;
5.6e-64;
nes 59;
                                                                                                                                                                                                                                  immunoglobulin
                                                                                                                Faculte
Pineau,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                           heavy
                                                                                                                                                                                                                                                                                      mRNA
                                                                                   consists
                                                                                                                                                                                                                                                                       ıınear MAM 04-FEB-1998
chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                des Sciences, CNRS URA Poitiers, FRANCE, 86022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                   of a
                                                                                                                                                                                                                                  heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6;
                                                                                   single
                                                                                                                                                                                                                                  chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                    444
                                                                                                                                                                                                                                                                                                                                                                                                                           384
                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.
```

```
REFERENCE
AUTHORS
                                                             KEYWORDS
SOURCE
                                                                                ACCESSION
VERSION
                                                                                                                                 RESULT J
AF172667
                                                                                                                                                                                          δÃ
                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                      뫄
                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                         ₽
                                                                                                             DEFINITION
                                                                                                                        Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 290
                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D_segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sig_peptide
                                                                                                                                                                         456
                                                                                                                                                                                            361
                                                                                                                                                                                                                 396
                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                        336
                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                              216
                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                              156
                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 79.1 res 290; Conservative
                                                                                                                                                                                                                                                      tca
                                                                                                                                                                         TCA
                                                                                                                                                                                                               acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                                                                                      CCAGGAAAGGCGCTGGAATGGCTTGGTGGAATACATACTAATGGAGGGGGAAACCTTAAC
                                                                                                                                                                                                                                                                                                                                                                             ACCTGCACGGTCTCTGGATTCTCATTAACCAACTATGCTGCAGGCTGGGTCCGCCAGGCT
                                                                              AF172667
Ovis aries clone 47 immunoglobulin mRNA, partial cds.
AF172667
AF172667.1 GI:5815203
                                                 Ovis aries
        Bovidae; Caprinae; Ovis.
1 (bases 1 to 366)
                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
 1 (bases 1
White,G.P.,
                                                             sheep.
                                                                                                                                                                           458
                                                                                                                                                                                            363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="VH"
/product="VH
386. .458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="VH"
90. .458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="D-JH
137 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MNPLWTLLEVLSAPRGVLSQVRLQESGPSLVKPSQTLSVTCTVS
GFSLTNYAAGWVRQAPGKALEWLGGIHTNGGGNLNPALKSRLSITRDTSKSQVSLSLS
SVASEDTAVYTCVRFGSGWAAADGIDYWGPGVLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product="VH region precursor"
/protein_id="CAA89033.1"
/db_xref="GI:794094"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="spleen"
/rearranged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="VH"
to 366)
Meeusen, E.N.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67.8%;
79.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     region"
132 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 246.2; DB 4;
Pred. No. 7.3e-64;
0; Mismatches 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            region"
  and
  Newton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                             mRNA linear
heavy chain pre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                             precursor
                                                                                                                        MAM 01-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                               335
                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                       275
                                                                                                                                                                                                                                                                                                                                                                             215
                                                                                                                                                                                                                 455
                                                                                                                                                                                                                                                        395
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

```
RESULT 1
AF172670
                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                          당
                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                              밁
                                                                                              Q
                                                                                                                         망
                                                                                                                                             Š
                                                                                                                                                                      망
                                                                                                                                                                                          Ş
                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                              361
                                                                                                   358
                                                                                                                          301
                                                                                                                                                298
                                                                                                                                                                       241
                                                                                                                                                                                           241
                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                    tcctca
                                                                                                                         TGGGGTGATCATGGTGTCGATTGTATCGACTACTGGGGCCCCAGGACTCCTGGTCACCGTC
                                                                                                                                     aatggtgacagtgttccttatggtttggactactggagcccaggactcctactcaccgtc
                                                                                                                                                                  CCAGCCCTTAAGTCCCGGCTCGACATCACCAGGGACACCTCCGACAAGCAGATCTCCCTG
                                                                                                                                                                                                                            acagccctacagtcccgactcagcgtcaccagggacacctccaagagcccaattctccctg
                                                                                                                                                                                                                                                                                                       CCAGGAGCGCCCTGGAATGGCTTGGTAGTGTTGATCATGATGGAGACACAGACTATAAC
                                                                                                                                                                                                                                                                          ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac
                                                                              TCCTCA
          AF172670
Ovis aries clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 (bases 1 to 366)
White,G.P., Meeusen,E.N.T. and Newton,S.E.
Direct Submission
Submitted (26-JUL-1999) School of Veterinary Science,
for Animal Biotechnology, The University of Melbourne,
Melbourne, Victoria 3052, Australia
 mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                              366
                                                                                                   363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80
partial cds
                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /Godon_start=1
/Godon_start=1
/product="immunoglobulin heavy chain precursor"
/product="immunoglobulin heavy chain precursor"
/protein_id="AAD52594.1"
/db_xref="Gi:5815204"
/translation="QVQLQESGPSLVKPSQTLSLTCTVSGFSLTSNAVHWVRQAPGAA
/translation="QVQLQESGPSLVKPSQTLSLTCTVSGFSLTSNAVHWVRQAPGAA
LEWLGSVDHDGDTDYNPALKSRLDITRDTSDKQISLSLSSVTTEDTAMYYCARDTCWG
DHGVDCIDYWGPGLLVTVSS"

a 110 c 99 g 77 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="abomasal lymph
/note="isolated from animals
contortus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="47"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <1. .>366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                             67.8%;
           57
         immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                       366
                                                                                                                                                                                                                                                                                                                                                                                                             246; DB 4;
No. 8.5e-64;
           heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    node"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        infected
          chain
                                                                                                                                                                                                                                                                                                                                                                                                                      Length 366;
                      linear
                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        with
          precursor
                      MAM 01-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Parkville,
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                               120
                                                                                                                         360
                                                                                                                                                                     300
                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                          120
                                                                                                                                              357
                                                                                                                                                                                                                                       240
                                                                                                                                                                                          297
                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                 ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                            Ş
                                                      Вb
                                                                          Q
                                                                                                Вþ
                                                                                                                                             В
                                                                                                                                                                 Qy
                                                                                                                                                                                         B
                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                  Matches 298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                     241
          301
                               301
                                                                          241
                                                                                                                       181
                                                                                                                                              121
                                                                                                                                                                     121
                                                                                                 181
                                                                                                                                                                                          61
                                                                                                                                                                                                               61
```

```
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             caggtgcagctgcaggagtcgggacccagcctggtgaagccctcacagaccctctccctc 60
GATAATACTTATGGACCGGCATATATCGACTACTGGGGCCCCAGGACTCCTGGTCACCGTC
                     ggtgaca---gtgttccttatggtttggactactggagcccaggactcctactcaccgtc
                                                                                                            tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat 300
                                                                                                                                                                              CCGGCCCTGAAATCCCGACTCGGCATCACCAGGGACACCTCCAAGAACCAGGTCTCCCTG
                                                                                                                                                                                                     acagccctacagtcccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                                                                                                                                               ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac 180
                                                                                                                                                                                                                                                                                                                                                                                      acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                                                                                                                                                                                       CCAGGAAAGGCATTGGAGTGGGTTGGTGCCATATGGAGTAGTGGGAATACAGACTATAAC
                                                                                                                                                                                                                                                                                                                                                              ACCTGCACGGTCTCTGGATTATCATTAACCAACTATGCTGTAGGCTGGGTCCGCCAGGCT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGTGCAACTGCAGGAGTCGGGACCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ovis aries
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bummalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
Bovidae; Caprinae; Ovis.
1 (bases 1 to 366)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (26-JUL-1999) School of Veterinary Science, for Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 366)
White,G.P., Meeusen,E.N.T. and Newton,S.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             White, G.P., Meeusen, E.N.T. and Newton, S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF172670
AF172670.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="QVQLQESGPSLVKPSQTLSLTCTVSGLSLINYAVGWVRQAPGKA
LEWVGAIWSSGNTDYNPALKSRLGITRDTSKNQVSLSLSSVTTEDTAVYYCVRHWYDN
TYGPAYIDYWGPGLLYTYSS"
107 c 96 g 76 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="abomasal lymph
/note="isolated from animals
contortus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product="immunoglobulin heavy chain
/protein_id="AAD52597.1"
/db_xref="GI:5815210"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="57"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                to 366)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:5815209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67.8%;
81.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 246; DB 4;
Pred. No. 8.5e-64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          node" infected with Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The Center
Parkville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                       300
                                                                                                                                                                                                                                                                       180
                                                                                                                                                                              240
                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                    В
                                                               20
                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
OAVR11IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ρ
   δÃ
                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
                                                                                                                                                                    Matches
                                                                                                                                                                                    Query Match 67.8%;
Best Local Similarity 81.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                       V_region
                                                                                                                                                                                                                                                                                                                                                                                                     sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                     D_segment
                                    153 ACCTGCACGGTCTCTGGATTCTCATTTAGTAACAATGCTGTAGGCTGGGTTCCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    358
121 ccaggaaaggcgcttgagtggctaggtggtgtgtccagtggtgcactaacagcctataac
                                                                   61
                                                                                                   93
                                                                                                                 1 caggtgcagctgcaggagtcgggacccagcttggtgaagccctcacagaccctctccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCTCA
                                                     acctgcacggtctctggattctcattaaccaagtatggtgttagttgggtccgccaggct 120
                                                                                                CAGGTGCAGCTGCAGGAGTCGGGACCCAGCCTGGTGAAGCCCTCACAGACCCTCTCCCTC 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tcctca
                                                                                                                                                                    298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ovis aries
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Caprinae; Ovis.
1 (bases 1 to 458)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         458 bp mRNA linear MAM 04-FEB-1998
O.aries mRNA for immunoglobulin mu heavy chain variable region
(clone VR11).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (27-APR-1995) Dufour V., Faculte des Sciences, CNRS UI
1172, IBMIG, 40, avenue du Recteur Pineau, Poitiers, FRANCE, 86(
2 (Dases 1 to 458)
Dufour, V., Malinge, S. and Nau, F.
The sheep Ig variable region repertoire consists of a single VH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z49158.1 GI:794091 diversity region; immunoglobulin; immunoglobulin heavy chain; joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96310953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunol. 156 (6), 2163-2170 (1996)
                                                                                                                                                                                                                                                                      101
                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  363
                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                  /gene="VH"
/product="VH region"
384. .458
/gene="VH"
                                                                                                                                                                                                                                                                                                                                                                     /gene="VH"
88. .458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="VH" 36. .>458
                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/product="VH region precursor"
/protein_id="CAA89027.1"
/protein_id="CAA89027.1"
/db_xref="GI:794092"
/translation="MNPLWTLLFVLSAPSGVLSQVQLQESGPSLVKPSQTLSLTCTVS
GESESNNAVGWYQAPGKTLEWVGNIWSDGSTYYNPALKSRLSITRDTSKSQVSLSLS
GESESNNAVGYCARDENSGWTYVGGIDYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                   /note="D-JH region"
135 c 124 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rearranged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VR11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="spleen"
                                                                                                                                                                   0;
                                                                                                                                                                 Score 246; DB 4; Length 458
Pred. No. 8.4e-64;
0; Mismatches 65; Indels
                                                                                                                                                                                                                                                                     98
                                                                                                                                                                                                                                                                     d
                                                                                                                                                                   ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CNRS URA
                                                                                                                                                                 Gaps
                                    212
                                                                                                                                  60
                                                                                                                                                                   1;
```

```
Ş
                                                                                                  Ωy
                                                                                                                                         QΥ
                                                                                                                                                                Ф
 Dp
                 Qy
                                        В
                                                                               Вр
                                                                                                                        Ъ
                    358
453 TCCTCA 458
                                       333
                                                                                                                                             181
                                                                                           241 tcactgagcagcgtgactactgaggacacggccatttactactgtgcgaaatctgtcaat 300
                                                                                                                                                                 213
                                                                                                                        273 CCGGCCCTGAAATCCCGGCTCAGCATCACCAGGGGACACCTCCAAGAGCCAAGTGTCCCTG
                                                                                                                                   acagccctacagtccccgactcagcgtcaccagggacacctccaagagccaattctccctg
                                                                                                                                                                tectea 363
                                                                                 TCACTGAGCAGCGTATCAATTGACGACACGGCCGTGTACTACTGTGCAAGAGATGAGAAT
                                                                                                                        332
                                                                                                                                             240
                                                                                                                                                                 272
                                                                                 392
```

Search completed: August 11, 2002, 22:03:49 Job time: 8214 sec

THIS PAGE BLANK (USPTO)

```
9b_est2:BF606302
9b_est2:BE48558
9b_est2:BE48588903
9b_est2:BE48588903
9b_est2:BE48692944
9b_est2:BE48692944
9b_est2:BE4869721
9b_est2:BE4869735
9b_est2:BE486747
9b_est2:BE4867179
9b_est2:BE4867179
9b_est2:BE4867179
9b_est2:BE4867179
9b_est2:BE6992857
9b_est2:BE6992857
9b_est2:BE6992857
9b_est2:BE6992857
9b_est2:BE6992857
9b_est2:BE6992857
9b_est2:BE6992857
9b_est2:BE4876743
9b_est2:BE487688655
9b_est2:BE487692857
9b_est2:BE487692857
9b_est2:BE487692857
9b_est2:BE487692857
9b_est2:BE487692857
9b_est2:BE487692857
9b_est2:BE487692857
9b_est2:BE487692857
9b_est2:BE48776857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_est2:BE482206
gb_est2:BE846229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database sequences: 13736207
Database length: -1841457050
Search time (sec): 2544.760000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Search information block:
Query: US-09-786-015-2
Query length: 121
Database: EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_est2:BE480296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_est2:BE589545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 score_list:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -MODEL-frame+_p2n.model -DEV=xlp
-(q-/cgn2_1/USPTO_spool/US09786015/runat_12082002_092422_40/app_query.fasta_1.347
-(q-/cgn2_1/USPTO_spool/US09786015/runat_12082002_092422_40/app_query.fasta_1.347
-DB=EST -QEMT=fastap -SUFFIX-p2n.rst -GAPOP-12.000 -GAPEXT=4.000
-MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000 -QGAPOP=4.500
-QGAPEXT=0.000 -YGAPOP-10.000 -YGAPEXT=0.500 -FGAPOP=6.000
-FGAPEXT=7.000 -YGAPOP-10.000 -YGAPEXT=0.500 -DELOP=6.000
-DELEXT=7.000 -YGAPOP-10.000 -YGAPEXT=0.500 -DELOP=6.000
-DELEXT=7.000 -START=1 -MATRIX=bLosum62 -TRANS=human40.cdi
-LIST=45 -DOCALIGN=20 -THR_SCORE-pct -THR_MAX=100 -THR_MIN=0
-ALIGN=15 -MODE-LOCAL -CUTFMT=pfs -NORM-ext -HEAPSIZE-500
-MINLEN=0 -MAXLEN=200000000 -USER-US09786015_@CGN1_1.4526
-NCPU=6 -ICPU=3 -LONGLOG -DEV_TIMEOUT=120 -WARN_FIMEOUT=30
-NO_XLPXY -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of: US-09-786-015-2 to: EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Aug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Results were produced by the Copyright (c) 1993-2000 Compu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2002 10:07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Or 19
                                                                                                                                  ¥
                                                     y the GenCore
Compugen Ltd.
     out_format :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.8e-38
3.6e-38
   3.2e-36
3.8e-36
4.4e-36
4.4e-36
                                                                                                                                                                                                                                         3e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EScore
                                                                                                .7e-36
.4e-36
.7e-36
                                                                                                                                                                                              .0e-36
                                                                                                                                                                                                                                                                                                            .1e-37
.2e-37
                                                                                                                                                                                                                                                                                                                                                                                        .1e-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                      .6e-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .3e-39
                                                                                                                                                                .2e-36
                                                                                                                                                                                                                                                                            .2e-37
.2e-37
                                                                                                                                                                                                                                                                                                                                                                                                                                         .7e-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .5e-38
                                                                                                                                                                                                                                                               ,1e-
                                                                                                                                                                                                                                                                                                                                                                                                                          .8e-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .5e-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1e-39
                                                                                                                                                                                                                               1e-37
                                                                                                                                                                                                                                                                                                                                             1e-
                                                                                                                                                                                                                                                                                                                                                          3e-
                                                                                                                                                                                                                                                                                                                                                                           1e-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3e-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3e-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2e-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .8e-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    software,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Len
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pfs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    version 4.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Documentation
! BE482206 16
BE4482206 167909 BARC 5B
BE648229 32099 BARC 5B
BE648229 32099 BARC 5B
BE648229 312099 BARC 5B
BE648229 115337 BARC 5B
BE6482026 165337 BARC 5B
BE6480296 165337 BARC 5B
BE6480296 1231399 BARC 5B
BE648507 173199 BARC 5B
BE64858903 194569 BARC 5B
BE648631 19459 BARC 5B
BE648631 19459 BARC 5B
BE6480749 165931 BARC 5B
BE6480749 165931 BARC 5B
BE6480749 165973 BARC 5B
BE6480749 165973 BARC 5B
BE6480749 165973 BARC 5B
BE6480749 1601B BARC 5B
BE6480749 1601B BARC 5B
BE6480749 1601B BARC 5B
BE64876774 34089 BARC 5B
BE6692467 342167 BARC 5B
5BOV BOS
                                                                                                                                                                                                              9
                                                                                                                                                                                            alignment_block:
US-09-786-015-2 x BE482206
                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                          alignment_scores:
    Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                            Align seg 1/1 to:
                                                                                                                                                                                                                                            Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                               34
                                   63
                                                                 17
                               alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est2:BE482206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wells,K.D
                                                                                                                                                                                                                                                                                                                                                          86
                                                                                                                                                                BE482206
                                                                                                                                                                                                                                            448.00
4.110
83.846
```

from:

1

to: 476

34 62 Gaps: Percent Identity:

130 2 71.538

```
gb_est2:BF230366
gb_est2:BI975985
gb_est2:BE588428
gb_est2:BE487301
gb_est2:BE487595
                                                                                                                                                                                                                                                                           Unpublished (2000)
Contact: Sonstegard TS
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed
v0.980904.e. Vector identified by cross_match with th
and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bovinae; Bos.

1 (bases 1 to 476)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              167909 BARC 5BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                               BACKWARD: GTTTTCCCAGTCACGACG
Plate: 22 row: O column: 5
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                              PCR PRimers
FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE482206.1 GI:9601739
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sonstegard, T.S.,
/organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC SBOV"
/tissue_type="pooled"
/lab_host="DH10B"
/note="vector: pCNV SPORT6; Site_1: XbaI; Site_2: XhoI;
/ibrary made from pooled mRNA isolated from mammary
/tissues at eight physiological, developmental, and diservates "
states "
134 c 143 g 101 t
                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  414.00
413.50
413.50
413.00
412.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Capuco, A.V., Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   811
810
810
810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.9e-36
7.1e-36
7.9e-36
7.0e-36
7.6e-36
                                                                                                                                                                                                                                                                                                called and alt_trimmed with phred by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tags from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   533
599
504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BF230366
BI975985
BE588428
BE487301
BE487595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5 251941
5 484597
8 194011
1 175972
5 176435
                                     disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BARC
BARC
BARC
BARC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5BOV
2BOV
5BOV
5BOV
5BOV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8 8 8
```

```
BASE COUNT
ORIGIN
                 alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION ACCESSION
                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 108 uAspTyrTrpSerProGlyLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       263
                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTGGT.....TATGGTTGTGGTAGCGGTGCTGATTATGATTACGT 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTGACAACTGAGGACACGGCCACATACTACTGTGCGAAAAAAAGTGGT 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATAAGTAATGGTGGAAGCACAGCCTATAATCCAGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGATGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlyAspSerValProTyrGly...... 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_est2:BE846229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
 Quality:
                                                                                                                                                                                                                                                                                           BACKWARD: GTTTTCCCAGTCACGACG
Plate: 112 row: J column: 9
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE846229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE846229 579 bp mRNA linear 232099 BARC 5BOV Bos taurus cDNA 5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                              FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                               Single pass sequencing: Bases called v0.980904.e. Vector identified by cro
                                                                                                                                                                                                                                                                                                                                                                                                                                Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mapping of Expressed Sequence Tags from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovidae; Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BE846229.1 GI:10283053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 579)
                                                                                       108
                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 504 8416
301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA library
                                                                         /Lab_host="phi08"
/lab_host="DH108"
/note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disea
states: "
171 c 166 q 13/
                                                                                                                                                                                                         /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                         Location/Qualifiers
 447.50
                                                                                                                                                                                                                                                                . 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos.
 Length:
                                                                                                                                                                                                                                                                                                                                                                                               led and alt_trimmed with phred
cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 393
 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 25-SEP-2000
                                                                                                                     disease
                                                                                                                                                                                                                                                                                                                                                                                                18
                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_block:
US-09-786-015-2 x BE846229
                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                seq_documentation_block:
LOCUS BE589545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name:
                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
Percent Similarity:
                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    464 CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      414 TGGTTCAGGACTCGATGCCTGGGGCCCAAGGACTCCTGGTCACCGTCTCCT 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              164 TAGGCTGGGTCCGCCAGGCTCCGGGGAAGGCGCTGGAGTGGGTTGGTGGT 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  114 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 er 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            214 ATAAGTAGTGGTGGAAGTACATGCCTTAATTTAGCCCTGCAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            264 CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCAGTGAGCA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSer.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uSerValThrargAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTTTTTATGGTTATGGTTATGGTTGTCTTGGTAATGGTTATGGTTA 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_est2:BE589545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  465
                                                                                                                                                                                                                                                                         Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                              COW.
and
PCR
                          Email: tads@lpsi.barc.usda.gov Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore
                                                                                USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                                                                                                                                                                                                             195790 BARC 5BOV Bos taurus
BE589545
                                                                                                                                                                                       Mapping of Expressed Sequence gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                              BE589545.1 GI:9842584
                                                                                                                                                     Contact: Sonstegard TS
                                                                                                                                                                   Unpublished (2000)
                                                                                                                                                                                                                         Wells, K.D.
                                                                                                                                                                                                                                       Sonstegard, T.S.,
                                                                                                                                                                                                                                (bases 1 to 505)
(bases 1 to 505)
(characteristic (bases)
                -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE846229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.106
81.343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Identity: 68.657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _
                                                                                                                                                                                                                                                                                                                                                                                                                               505 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ë
                                                                                                                                                                                                                                                                                                                                                                                                               cDNA 5', mRI
                                                                                                                                                                                                       Tags
                                                                                                                                                                                                                                       Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       579
                                                                                                                                                                                                       from a
                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence
                                                                                                                                                                                                         normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                     Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34
                                                                                                                                                                                                                                                                                                                                                                                                                                EST 28-AUG-2000
                                                                                                                                                                                                       bovine mammary
```

Bovoidea;

18

```
seq_documentation_block:
LOCUS
BE480296
DEFINITION 165337 BARC 58
ACCESSION BE480296
VERSION BE480296.1 GI
                               KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                 seq_name: gb_est2:BE480296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Align seg 1/1 to: BE589545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-786-015-2 x BE589545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                  427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130
                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                280
                                                                                                                                                                                                                                                                                                                                                                                                                                            230
                                                                                                                                                                                                                              115
                                                                                                                                                                                                                                                            380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                          34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlyAspSer.....ValProTyrGlyLeuAspTyrTrpSerProGlyLe 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                              CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCAGTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                 uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGACTGGGTCCGCCAGGCTCCGGGGAAGGCCGCTGGAGTGGATTGGTAGT
                                                                                                                                                                                                CCTGGTCACCGTCTCCTCA
                                                                                                                                                                                                                              uLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                            GGTGATAGTTGGGATACTAATTATGGT...GATGCCTGGGGCCCAGGACT
                                                                                                                                                                                                                                                                                                                    GCGTGACACCTGAGGACACGGCCACATACTACTGTGCAAAGGGTTATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                            ATAAGTGTTGGTAGAAGCACATACTATAACCCAGCCCTAAAATCCCGGCT
                                                             EST.
                                                                           BE480296
BE480296.1 GI:9599829
                                                                                                     165337 BARC 5BOV Bos taurus cDNA
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                Bos taurus
                                                COW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plate:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                te: 122 row: F column: 3 primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            444.50
4.154
86.992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="pooled"
/lab_host="PH10B"
/note="Vector: pCMV SPORT6; Site_1: Xba1; Site_2: XhoI;
/inbrary made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disease
states."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149 c
                                                                                                                                                                                                445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   138 g
                                                                                                                       514 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to: 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     107 t
                                                                                                  5', mRNA sequence.
                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73.984
                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                    379
                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                                                                                                                                                                                                                                                                                                                                                            279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          129
                                                                                                                       EST
                                                                                                                       28-AUG-2000
 Bovoidea;
```

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-786-015-2 x BE480296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             325
                                                                                                                                                                                                                                                                                                                                                                                       225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101 GlyAspSerVal......ProTyrGlyLeuAspTyr.....
                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75 CAGGTGCAGCTGCGGGAGTCGGGGCCCCAGCCTGGTGAAGCCCCTCACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
GCGTTACAACTGATGACACGGCCACCTACTACTGTGCGAAGTCTTACGGT 374
                                                                                                                                                             erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                           CAGGATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCGCTGAGCA
                                                                                                                                                                                                                                                                                             uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases v
v0.980904.e. Vector identified
and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wells,K.D.
Mapping of Expressed Sequence Tags from a gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq primer: ATTTAGGTGACACTATAG
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tel: 301 504 8416 Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BACKWARD: GTTTTCCCAGTCACGACG
Plate: 16 row: D column: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 51 Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovidae; Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE480296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="pooled"
/lab_host="DHIOB"
/lab_host="DHIOB"
/note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_1: XbaI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_2: XhoI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_2: XhoI; Site_2: XhoI;
/note="Vector: pCMV Sports | XhoI; Site_2: XhoI; 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         441.50
4.088
84.375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    161 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          514)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length: 128
Gaps: 2
Percent Identity: 72.656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                137 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               سر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 called d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    113 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 led and alt_trimmed with
cross_match with the -mi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center
                                                               110
   424
                                                                                                                                                                                                                                                           324
                                                                                                                                                                                                                                                                                                                                                                                    274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  phred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18
```

```
alignment_block:
US-09-786-015-2 x BF606302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                        alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_documentation_block:
LOCUS BF606302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                            Align seg 1/1 to: BF606302
                                                                                                                                                                                                                                           Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                     17
                                                             79
                                                      rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGGGCCAAGGACTCCTGGTCACCGTCTCCTCA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .TrpSerProGlyLeuLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est2:BF606302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 495)
Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T., Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett, G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G., Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FORWARD: AGGADACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 60 row: G column: 12
Seg primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
Tel: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                                                                                                                                                                                                                                   Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bovidae; Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BF606302.1 GI:11706773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BF606302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 273305 MARC 3BOV Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21180013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -minmatch 12 options
                                                                                                                                                                                                                                                                                                                                                                                        104
                                                                                                                                                                                                                                                                                                                                                                                        മ
                                                                                                                                                                                                                                                                                                                                                                            /organism="Bos taurus"
/ob_xref="taxon:9913"
/clone_type="MARC 3BOV"
/tissue_type="MARC 3BOV"
/tissue_type="pooled"
/lab_host="DH10B"
/note="Vector: pcMV SPORT6; Site_1: XbaI; Site_2: XhoI;
note="Vector: pcMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled tissue from marrow, alveolar
macrophage, ovary, fetal semitendonosus muscle, and feta
longissimus muscle."
a 152 c 128 g 111 t
                                                                                                                                                                                                                                           438.00
4.093
84.252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos.
                                                                                                                                            from: 1
                                                                                                                                                                                                                                           Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    495
                                                                                                                                          to: 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 bp
cDNA
                                                                                                                                                                                                                                                                                     Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA linear
5', mRNA sequence.
                                                                                                                                                                                                                                             2
71.654
                                                                                                                                                                                                                                                                                   127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                              and fetal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
LOCUS
BE485907
DEFINITION 173199 BARC 5BOV Bos taurus
ACCESSION BE485907
      BASE COUNT
                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name: gb_est2:BE485907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    179
                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSer...Val 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe :::|||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCCAAGGACTCCTGGTCACCGTCTCCTCA 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pSerProGlyLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGGGATCCTAATAGGTTGTTTTATGATGTTTATCAACTCGATGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AsnGlyAspSerVal.....ProTyrGlyLeuAspTyrTr 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCATGACAACTGAGGACACGGCCACATACTACTGTGCGAAGGGTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCGTCACCAAGGACAACTCCAAGAGCCAAGTTTCTCTGTCACTTAGCA 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAAGTAGTGGGGAAAGCACATGCCTTAACCCAGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCCTGGGTCCGCCAGGCTCCGGGGAAGGCGCTGGAGTGGCTTGGTGGT 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTCTCCCTCACCTGCACGACCTCTGGATTCTCATTGAGCGCCTATACTA 178
                                                                                                                                                                                                                                                                                                                                                        Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases v
0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
                                                                                                                                                                                                                                       BACKWARD: GTTTTCCCAGTCACGACG Plate: 131 row: G column: 6 Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 301 504 8416 Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cow.
Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE485907.1 GI:9605440 EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gland cDNA library
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 50 Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                   FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wells,K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                      PRimers
        109
                                                                                                                                                                                                                                                                                                                                      -minmatch 12 options
      Ø
                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
/note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

154 c 129 g 110 t
                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 bp
cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Van
                                                                                                                                                                                                                                                                                                                                                                            called and alt_trimmed with phred
                                                                                                                                                                                                                                                                                                                                                          γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA linear
5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                            cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
cora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bovine mammary
                                          disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
```

ORIGIN

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
US-09-786-015-2 x BE485907
                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_est2:BE845758
                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: BE485907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ratio:
Percent Similarity:
                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                78 CAGGTGCAGCTGCGCGAGTCGGGGCCCCAGCCTGGTGAAGCCCTCACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       uAspTyrTrpSerProGlyLeuLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCAGTGAGCA 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAAGTAGTGGTAGAAGTACAGACTATAACTCAGCCCTGAAATTCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATGTTAATACTTGGAATTGTGGTGGTGGTGACGGTATCGACTAC..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ......GlyAspSerValProTyrGlyLe 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTGACACCTGAGGACACGGCCACATACTTCTGTGCAAAAAACAACTAGT 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAAGCTGGGTCCGCCAGGCTCCAGGGAAGGCGCTGGAGTGCCTCGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTAAGCAGCTATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGATGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCCTCA 464
                                                                                                                                                                                                                                                                               Bos taurus

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea

Bovidae; Bos.

1 (bases 1 to 549)

1 (bases 1 to 549)
                                                Tel: 301 504 8416
Fax: 301 504 8414
Email: tads@lpsi.barc.usda.gov
Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore
                                                                                                                                            Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
                                                                                                                                                                                                                      Mapping of Expressed Sequence Tags from a normalized bovine mammary gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                               EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    232868 BARC 5BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality:
                                                                                                                                                                                                    Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                   BE845758.1 GI:10282582
                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE845758
 FORWARD:
                 PCR PRimers
                                 -minmatch 12 options.
AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  434.00
3.945
84.615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         549 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
68.462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-SEP-2000
                                                                                                                                                                                                                                                                                                                                     Bovoidea;
                                                    18
```

```
DEFINITION
ACCESSION
VERSION
                                                     SOURCE
ORGANISM
                                                                                                                                                        seq_documentation_block:
LOCUS BE476735
                                                                                                                                                                                                        seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-786-015-2 x BE845758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1 to: BE845758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
                                                                                                                                                                                                                                          425
                                                                                                                                                                                                                                                                           110
                                                                                                                                                                                                                                                                                                             378
                                                                                                                                                                                                                                                                                                                                                                             328
                                                                                                                                                                                                                                                                                                                                                                                                                                                  278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       178 TAAGCTGGGTCCGCCAGGCTCCAGGGAAGGCGCTGGAGTGGGTTGGTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGCTG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                             rTrpSerProGlyLeuLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSer.....
                                                                                                                                                                                                                                          CTGGGGCCAAGGACTCCTAGTCACCGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS 84
                                                                                                                                                                                                                                                                                                             AGGTGCGTCTGTGGTGAT...TATAGTTATCTCTGGTGCGGACAAGATGC 424
                                                                                                                                                                                                                                                                                                                                                                               GCGTGACACCTGAGGACACAGCCACATACTACTGTGCAAAAAATTGTGAT 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAAACAGTGGTAGGAAGCACAGTCTATAACCCAGCCCTGAAATCCCCGGCT
                                                                                                                                                                                                                                                                                                                                           .....ValAsnGlyAspSerValProTyr......GlyLeuAspTy 110
                                                                                                                                                                                                      gb_est2:BE476735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Quality:
Ratio:
                                                                                   BE476735.1 GI:9596268
                                                                   COW.
                                                                                                                     160120 BARC 5BOV
BE476735
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea Bovidae; Bovinae; Bos.
                                                     Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BACKWARD: GTTTTCCCAGTCACGACG Plate: 113 row: J column: Seq primer: ATTTAGGTGACACTATI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: X: Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and states."

167 c 151 g 117 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            434.00
4.019
84.375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                     Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _
                                                                                                                                                      489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                      CDNA
                                                                                                                                                      þ
                                                                                                                               5', mRNA
                                                                                                                                                     mRNA
                                                                                                                                     sequence.
                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                  327
                                                                                                                                                                                                                                                                                                                                                                                                                 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Site_2: XhoI;
                                                                                                                                                      EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and disease
                   Bovoidea;
```

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
US-09-786-015-2 x BE476735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to: BE476735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                   282
                                                                                                                                                                                                                                                                                                                                    182
                                                                                                                                                                                                                                                                                                                                                                                                                132 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTAAGCGATAATAGTG 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                 232 ATAAAGAGTGGTGGAAGCACAGGCTATAACCCAGCCCTGAAATCCCGGCT
                                                                                                                        84
                                                                                                                                                                                                                                                                                          51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67 uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS 84
                                                                                                                                                                                                                                                                                                                                                       34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                        17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                     erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                       ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe ::::::||||||:::||||||||
                                    GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                               CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCGGTGAGCA 331
                                                                                                                                                                                                                                                                                                                                  TAAACTGGGTCCGCCAGGCTCCAGGAAAGGCGCTGGAGTGGCTCGGTGTC 231
GGTGATAGTACT...TATACATATTATACCTGGGGCCAAGGACTCCTGGT
                                                                                GCGTGACACCTGAGGACACAGCCACATACTACTGTGCAAGAGGTGTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mapping of Expressed Sequence Tags from a normalized bovine mammary gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BACKWARD: GTTTTCCCAGTCACGACG
Plate: 28 row: J column: 21
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and -minmatch 12 options. PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 489)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="pooled"
//lab_host="NHIOB"
//lab_host="NHIOB"
/note="Vector: pcNV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disease
states."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L. .489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    433.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88.430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Identity: 72.727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to: 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           104 t
                                                                                381
                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COW.
```

```
alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: gb_est2:BE588903
                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-786-015-2 x BE588903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_documentation_block:
LOCUS BE588903
                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: BE588903
                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117 uThrValSerSer 121 :|||||||||||||
     164
                                                                                                114 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAACTATGGTG
                    34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                          17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                     64 CAGGTGCAGCTGCGGGAGTCAGGCCCCAGCCTGGTGAAGCCCTCACAGAC
                                                                                                                                                                                                                          1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCGTCTCCTCA 441
TAAACTGGGTCCGCCAGGCTCCGGGGAAGGCACTGGAGTGGGTTGGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     194569 BARC 5BOV Bos taurus cDNA 5', mRNA sequence.
BE588903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (2000)
Contact: Sonstegard TS
CONTACT, Beltsville Agricultural Research Center
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE588903.1 GI:9841942
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plate: 121 row: C column: 10 Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore 18 \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mapping of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 595)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

a 178 c 167 g 131 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                               433.00
3.936
82.707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                        from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Identity:
                                                                                                                                                                                                                                                                                                     to: 595
                                                                                                                                                                                                                                                                                                                                                                                                                                  67.669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          developmental, and disease
                                                                                                                                                                                                     113
213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 28-AUG-2000
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
                                                                                           ORIGIN
                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
LOCUS BE485689
                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: gb_est2:BE485689
                                                                                                       BASE COUNT
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /ERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            411 CTAC...GTCGATACCTGGGGCGAAGGACTCCTGGTCACCGTCTCCTCA 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     214
                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerVal...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       oTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLeuThrValSerSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe ::::::||||||:::|||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGGTATTCTGTGGGAGTGTTTTGGTTATCATAATGGT...GGTGTACA 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGTGACACCTGAGGACACGGCCACATACTACTGTACGAAATGTACTGGA 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATAAATAGTGGTGGGGGTACAGCCTATAATCCAGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .....AsnGlyAspSerValPr 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE485689 509
172839 BARC 5BOV Bos taurus
                              Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE485689.1 GI:9605222
EST.
                                                                                                                                                                                                                                                                                 BACKWARD: GTTTTCCCAGTCACGACG
Plate: 132 row: H column: 6
Seg primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                        Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases c
v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (2000)
Contact: Sonstegar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mapping of Expressed Sequence gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bovidae; Bovinae; Bos.
1 (bases 1 to 509)
Sonstegard, T.S., Capuco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE485689
                                                                                                                                                                                                                                                                                                                                FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                              PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                          -minmatch 12 options.
                                                                                                         104
                                                                                                                                                                             /organism-"Bos taurus"
/db_xref-"taxon:9913"
/clone_lib-"BARC 5BOV"
/tissue_type-"pooled"
/lab_host-"DH10B"
                                                                                                       /note-"Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and diserstates."

147 c 143 g 115 t
 430.50
3.986
83.077
                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Capuco, A.V.,
Length:
Gaps:
Percent Identity:
                                                                                                      143 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9 bp
cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Van
                                                                                                                                                                                                                                                                                                                                                                        called and alt_trimmed with phred
d by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tassell,C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from
 130
2
66.923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
cora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST
                                                                                                                                     and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                 FEATURES
                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Align seg 1/1 to:
                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              232
 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                      and -minmate
PCR PRimers
                                                                                                                                                                                                                                                                                                                                            Eukaryota;
Mammalia; 1
                                                                                                                                                                                                                                                                                                                                                                         Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                      COM
                                                                                                                                                                                                                                                                                                                                                                                                                                   BE476121
                                                                                                                                                                                                                                                                                      Wells,K.D.
```

```
alignment_block:
US-09-786-015-2 x BE485689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101 Gly...... AspSerValProTyrGly...... Le 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    108 uAspTyrTrpSerProGlyLeuLeuLeuThrValSerSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe ::::::|||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTGAGGGCAGTTATGATTGTTATGCTTATGGTGCTTGTCGACTCTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGTGACACCTGAAGACACGGCCACATACTACTGTGGGAAATTTATTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCGGTGAGCA 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATAAATAGTGGTGGGAGCACACACTATAACCCCAACCCTGAAATCCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGGCTGGGTCCGCCAGGCTCCGGGGAAGGCACTGGAGTGGGTTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_est2:BE476121
                                                                                                                                                                                          USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                BACKWARD: GTTTTCCCAGTCACGACG
Plate: 26 row: G column: 1
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                   Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE476121.1 GI:9595654 EST.
                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 518)
Sonstegard, T.S., Capuco, A.V.,
                                                                                                                                                                                                                                                                         Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                           Unpublished (2000)
                                                                                                                                                                                                                                                                                                             Mapping of Expressed Sequence gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 158709 BARC 5BOV
                                                                            FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                         Bovidae; Bovinae; Bos.
                                                                                                                 -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE485689
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                             ; Metazoa; Chordata; Craniata; Vertebrata; Eutel
Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          518 bp
Bos taurus cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
6
                                                                                                                                     called and alt_trimmed with phred d by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                  Tags
                                                                                                                                                                                                                                                                                                                                                                      Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA linear
5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                from a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131
                                                                                                                                                                                                                                                                                                                                                                        Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17
                                                                                                                                                                                                                                                                                                                                                                                                                                               Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST
                                                                                                                                                                                                                                                                                                                                  bovine mammary
                                                                                                                                       -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                 Bovoidea;
                                                                                                                                       18
```

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
Quality:
                                                                                                                                             seq_documentation_block:
LOCUS BG692944
DEFINITION 342818 BARC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-786-015-2 x BE476121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                        seq_name: gb_est2:BG692944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
   REFERENCE
                                                                                                               VERSION
                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: BE476121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                                                                                                                                                                                                                                       347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      297
                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                         447
                                                                                                                                                                                                                                                                                                                                                                        397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             147 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGCTG
                                                                                                                                                                                                                                          497 CA 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAGGGACTACGTCGATGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerVal...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                         er
                                                                                                                                                                                                                                                                                                                                                                     GCTGGTGGTGGCGATAGTGGTGGTGGTACTTGTTGGGCCTTATGGTCATGGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAGCTGGATCCGCCAGGCTCCAGGGAAGGCGCTGGAGTGCCTCGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTGACACCTGAGGACACGGCCACATACTACTGTGCAAAAAGTTCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCGCTGTCAGTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATACACAGTGGTAGAAGCACAGGCTATAACCCAGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                     .....LeuAspTyrTrpSerProGlyLeuLeuThrValSerS 121
                                                                                                                                                                                                                                                                                                                                                                                                  .....AsnGlyAspSer.......ValProTyrGly...... 107
                                                                                              EST.
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bos.
1 (bases 1 to 513)
                                                             Bos taurus
                                                                                                                                           342818 BARC 5BOV Bos taurus cDNA
                                                                                                               BG692944.1 GI:13934764
                                                                                                                               BG692944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."

a 150 c 149 g 110 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    430.50
3.950
81.343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length: 134
Gaps: 3
Percent Identity: 68.657
                                                                                                                                                             513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
:
                                                                                                                                                            gq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         518
                                                                                                                                        5', mRNA
                                                                                                                                                            mRNA
                                                                                                                                           sequence.
                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                      446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50
                                                                                                                                                             EST
                                                                                                                                                             02-MAY-2001
```

```
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-786-015-2 x BG692944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                 114 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGCTG
                                364
                                                                                           314
                                                                                                                                                           264
                                                                                                                                                                                                                        214
                                                                                                                                                                                                                                                                                      164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                            84
                                                                                                                                                                                         67
                                                                                                                                                                                                                                                     51
                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                                                                                               17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                             GCGTGACACCTGAGGACACGGCCACATACTACTGTGCAAAAAGTAGTTAT 363
                                                                                                             erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSer.....
                                                                                                                                                         CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCAGTGAGCA
                                                                                                                                                                           uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                        ATTCGCAGTAGTGGAAACACAGCCTATAACCCAGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                        ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe ::: ||||:::: ||||||||||
                                AGTGGTGCGGGTGTTGGTGGTTGTTGGTGGATATTATTATGGTAA 413
                                                          Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases c
v0.980904.e. Vector identified
and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BACKWARD: GTTTTCCCAGTCACGACG
Plate: 43 row: J column: 13
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (2000)
Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sonstegard,T.S., Capuco,A.V.,
Wells,K.D.
Mapping of Expressed Sequence
gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
LeuAspTyrTrpSerProGlyLeuLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG692944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               states."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and dise
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         428.00
3.891
82.707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
O:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   called and
1 by cross_m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   led and alt_trimmed with phred
cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            69.925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 developmental, and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center
                                                                                                                                                                                                                                                     67
                                                                                                                            98
                                                                                                                                                         313
                                                                                                                                                                                         84
                                                                                                                                                                                                                      263
                                                                                                                                                                                                                                                                                    213
                                                                                                                                                                                                                                                                                                                   50
                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                                                                                                                                                                                                34
                                                                                                                                                                                                                                                                                                                                                                                                                                              17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18
```

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                               alignment_block:
                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block:
LOCUS BF230469
DEFINITION 252126 BARC:
ACCESSION BF230469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: gb_est2:BF230469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                              Align seg 1/1 to: BF230469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /ERSION
                                                                                                                                                                                                                                US-09-786-015-2 x BF230469
                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                              130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                34
                                                                                                17
                                                                                                                                 80
                                                                                                                             rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                              CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATACTG 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USDA, ARS, Beltsville Agricultural Research Center Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred $\text{Single pass sequencing.} Bases called and alt_trimmed with phred $\text{V0.989904.e.} Vector identified by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                              Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and -minmatch 12 options.
PCR PRIMERS
FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BF230469.1 GI:11168474 EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 503
252126 BARC 5BOV Bos taurus
BF230469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mapping of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sonstegard,T.S., Capuco,A.V., Van Tassell,C.P., Ashwell,M.S. Wells,K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutel
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus
                                                                                                                                                                                                                                                                                              Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 501)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       te: 110 row: J column: 3 primer: ATTTAGGTGACACTATAG. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                              104 a
                                                                                                                                                                                                                                                                            427.50
4.033
84.127
                                                                                                                                                                                                                                                                                                                                                                                                           /note-"Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Bos taurus"
                                                                                                                                                                                                                                                                                                                                                                                            153 c
                                                                                                                                                                                              from:
                                                                                                                                                                                                                                                                            Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                            132 g
                                                                                                                                                                                               _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   501
                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cDNA 5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   å
                                                                                                                                                                                                                                                                                                                                                                                              112 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                             69.841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST 14-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                            alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51
                            Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COW
               Ratio:
```

```
seq_documentation_block:
LOCUS BE480721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           430 CCAAGGACTCCTGGTCACCGTCTCCTCA 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112 rProGlyLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330 GCGTGACACCTGAGGACACAGCCACATACTACTGTGGAAGTAGTTGTGGT 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               380 GGTGGAGATGCTCTTTATTATGGTTGTACTTATGTTGCCGATGCCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100 AsnGlyAspSerValProTyrGlyLeuAspTyr......TrpSe 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                280 TAGCATCACCAAGGACAACTCAAAGAGCCAAGTCTCTCTGTCAGTGAGCA 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    230 ATAAGGAGTGATGGAAGCACATACTATAACCCAGCCCTGAAATCCCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerVal...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_est2:BE480721
                                                                                                                                                                                                                                                                                                                  Plate:
Seq pri
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases ov
v0.980904.e. Vector identified
and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (2000)
Contact: Sonstegard TS
COSDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE480721.1 GI:9600254 EST.
                                                                                                                                                                                                                                                                                                                  BACKWARD: GTTTTCCCAGTCACGACG
Plate: 17 row: L column: 19
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE480721 509 bp mRNA linear 165931 BARC 5BOV Bos taurus cDNA 5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                            PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mapping of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mammalia; Eutheria; Ce
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE480721
                                                                                                                                                                                                                                                                                                                                                                                                           FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 509)
     110
/note-"Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and diserstates."

154 c 130 g 115 t
                                                                                                                             /clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                              /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                        1. .509
                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    called and alt_trimmed with phred
d by cross_match with the -minscore 18
                                                    developmental, and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST 28-AUG-2000
```

427.50 4.071 85.366

Percent Identity:

123 2 72.358

Length:

```
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-786-015-2 x BE480721
                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
LOCUS BE588530
                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name: gb_est2:BE588530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: BE480721
                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         291 CATCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTATCACTGAGCA 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTAAGCGAGCATAATG
                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    115 uLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91 CAGGTGCAGCTGCGGGAGTCGGGGCCCCAGCCTGGTGAAGCCCTCACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGATGGTTATTCTTGTAATTTCCTGTTGGAC...TGGGGCCCAAGGACT 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GlyAsp.....SerValProTyrGlyLeuAspTyrTrpSerProGlyLe 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATACATAGTGGTGGAAACACAGACTATAACCCGGCCCTGAAATCGCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGGCCACCGTCTCCTCA 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGTGACAACTGAGGACACGGCCACATACTACTGTGCAAGATGTATTTAT 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          193837 BARC 5BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                            Contact: Sonstegard TS USDA, ARS, Beltsville Agricultural Research Bd1g. 200 Rm 2A, Beltsville, MD 20705, USA Tel: 301 504 8416 Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST.
                                                        BACKWARD: GTTTTCCCAGTCACGACG
Plate: 116 row: D column: 22
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                            PCR PRimers
                                                                                                                                                              and -minmatch 12 options.
                                                                                                                                                                                 Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscor
                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                        \begin{array}{lll} \textbf{Mapping} & \text{of Expressed Sequence Tags from a normalized} \\ \textbf{gland cDNA library} \end{array} 
                                                                                                                                                                                                                                                                                                                                                                                                                     Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BE588530.1 GI:9841569
                                                                                                                       FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                             Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 581)
                                       Location/Qualifiers
∕organism="Bos taurus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   509
                                                                                                                                                                                   cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                             bovine mammary
                                                                                                                                                                                   18
```

```
alignment_block:
US-09-786-015-2 x BE588530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Align seg 1/1 to: BE588530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                    311
                                                                  361
                                                                                             101 GlyAspSerVal......ProTyrGlyLeuAs 109
                                                                                                                                                                                                     211
411 TTACGTCGATGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCCTCA 456
                                109
                                                                                                                                                                                                                                                                                                                                             161 TAAACTGGGTCCGCCAGGCTCCAGGGAAGGCGCTGGAGTGCCTCGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                111 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAGCGCTGCTG
                                                                                                                                 67
                                                                                                                                                                                                                                                                                                         51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                             34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 CAGGTGCAGCTGCGCGAGTCGGGCCCCAGCCTGGTGAAGCCCTCACAGAC 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                                                                                                                           ATACAGAGTGGTGGAGGAACAGGCTATAACCCAGCCCTGAAATCCCGGCT
                                                                GGTGGTGGTAGTGGTAATGGTTGTTATCTTAATGCTTATGGTTGCGA
                                                                                                                                                                                                                                       uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                            pTyr.....TrpSerProGlyLeuLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:9913"
/clone_llb="BARC 550V"
/tlssue_type="pooled"
/lab_host="BHH0B"
/note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disease
states."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         427.50
3.958
81.818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               174 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          169 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         132
2
68.182
                                                                    410
                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                           210
                                                                                                                                                                                                                                                                                                                                                                             50
                                                                                                                                                                                                                                                                                                                                                                                                                160
                                                                                                                                                                                                                                                                                                                                                                                                                                                  34
```

THIS PAGE BLANK (USPTO)

```
Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          score greater and is derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No.
       564
389.5
387
385.5
385.5
385.5
385.5
385.5
                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A_Geneseq_032802:*
1: /SIDS1/gcgdata/h
2: /SIDS1/gcgdata/h
3: /SIDS1/gcgdata/h
4: /SIDS1/gcgdata/h
5: /SIDS1/gcgdata/h
6: /SIDS1/gcgdata/h
7: /SIDS1/gcgdata/h
8: /SIDS1/gcgdata/h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match
       100.0
69.0
68.9
68.6
68.4
68.4
68.3
68.3
68.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is the number of results predicted by chance to have a ster than or equal to the score of the result being printed vived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                110:
111:
113:
114:
115:
116:
117:
119:
119:
220:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           August 12, 2002, 09:25:38; Search time 52.21 Seconds (without alignments) 236.146 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              747574 segs, 111073796 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-786-015-4
564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1991.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1992.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1992.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1993.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1995.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1995.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1996.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA2000.DAT: *
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA2000.DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QDVLTQPSSVSGSLGQRVSI.....SYQSTYSGVFGSGTRLTVLG 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1980.DAT:*
\SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1981.DAT:*
\SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1982.DAT:*
\SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1983.DAT:*
\SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1984.DAT:*
\SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1985.DAT:*
\SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1985.DAT:*
\SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1985.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1986.DAT:*
/SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1987.DAT:*
/SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                         147
236
249
110
109
113
                                                                                                                                                                                                                                                                                                                                                                                                                    BB
                                                                                                                                                                                                                                                                                                                                                                                                                    Ħ
AAG80216
AAB52208
AAG62963
AAB36083
                                                                                                                                     AAB36209
ABG12886
AAU02620
AAY95205
AAG65569
                                                                                                                                                                                                                                                                                                           AAY82529
AAM39507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               747574
                        Carcinoembryonic a Human polypeptide Human polypeptide Human immune syste Novel human diagno Anti-adipocyte mon Anti-platelet glyc Amino acid sequenc Human autoantibody Human anti-HBs ant Amino acid sequence Pocochiano ac
                                                                                                                                                                                                                                                                                                                                                                                                             Description
       Recombinant human
```

45	44	43	42	41	40	39	38	37	36	3 5	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
375	375	375	376	376	376	376	376	376	376	376.5	377	377	377	377	377	377	378.5	379	379	379.5	379.5	379.5	379.5	380	380	380	380.5	381	381	381	381	381	381.5
66.5	•		•	٠										66.8								67.3										67.6	
242	132	110	111	110	110	110	110	110	110	310	262	258	249	111	111	110	112	251	235	242	118	112	110	131	111	111	130	235	113	111	111	110	246
20	22	21	20	20	20	20	20	20	20	20	20	18	20	18	15	22	21	22	22	21	22	18	21	14	20	18	22	22	14	22	22	22	21
AAY21881	AAG65561	AAY96061	AAY43256	AAW78431	AAW78430	AAW78426	AAW78425	AAW78424	AAW78423	AAW83324	AAW97890	AAW08487	AAY06713	AAW08492	AAR45606	AAG80222	AAB39520	ABG19291	AAB36212	AAY95209	AAG65555	AAW08488	AAY95182	AAR31535	AAY43257	AAW13528	AAB48028	AAG65320	AAR34276	AAG65319	AAG62957	0257	AAY58235
acid	acid sequ	i-DAF an	n CDR c	light			light	light	y light ch	nain Ap	ᇻ		10F6	C6 human sFv antib	Monoclonal antibod		i		Human immune syste	tel	ino ac	C6 human sFv antib	pla	7 MAb light c		Anti-melanoma ligh	Light chain sequen	Anti-IL-18 antibod		Anti-IL-18 antibod	Amino acid sequenc		Internalising anti

ALIGNMENTS

RESULT AAY82529

AAY82529;

AAY82529 standard; Protein; 111

B

```
A new high-affinity monoclonal antibody that is characterized by acid-washed enzyme-linked immunosorbent assay for use in cancer (
                                                                                                                                                                                                         Carcinoembryonic antigen; CEA; sheep; monoclonal antibody; tumour associated antigen; anti-carcinogenic; cytostatic; cancer therapy.
                                    WPI; 2000-375618/32
N-PSDB; AAA08401.
                                                                                                                                                                                      Ovis sp
                                                                                                                                                                                                                                               Carcinoembryonic antigen affinity antibody light chain variable region
                                                                  Harrison
                                                                                                                                                09-MAR-2000
                                                                                                                                                                   WO200012556-A1
                                                                                                                                                                                                                                                                    13-JUL-2000
                                                                                                         28-AUG-1998;
                                                                                                                            20-AUG-1999;
                                                                                    (KSBI-) KS BIOMEDIX LTD.
                                                                  PЛ
                                                                                                                                                                                                                                                                   (first entry)
                                                                                                       98GB-0018915.
                                                                                                                            99WO-GB02729
      y an
therapy
```

Claim

8

Page 16;

21pp;

English

```
RESULT
AAM39507
δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8X202020202020XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 111;
                                  Tang
Wang
Zhao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention describes a high-affinity monoclonal antibody characterised by an acid-washed enzyme-linked immunosorbent assay (EIA). The antibody is used in cancer therapy. Association of the new antibody with an antigen is favoured over dissociation in vivo and they therefore have longer localisation times at target sites, resulting in a higher concentration of antibodies localised at the target sites. Targeting the antibody to a site in vivo is improved. The concentration of antibody does not need to be too high which reduces side-effects and costs of therapy. The present sequence represents the light chain variable region of a monoclonal antibody having affinity for carcinoembryonic antigen (CEA, a tumour associated antigen), which is used in the exemplification of the present invention
                                                                                                                                                                                                                                                                                                                                           Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance peripheral nervous system; neuropathy; central nervous system; CNS; Alzhelmer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic;
                                                                                                                                                                                                                                                                                                                                 chemokinetic; thrombolytic; drug screening; arthritis; inflammation
N-PSDB;
                                                                                                                                   03-AUG-2000;
14-SEP-2000;
                                                                                                                                                                      25-APR-2000;
09-JUL-2000;
                                                                                                                                                                                                                                                                        WO200153312-A1
                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                            Human polypeptide SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAM39507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of the present invention.
                                                                                     (HYSE-)
                                                                                                                                                             19-JUL-2000;
                                                                                                                                                                                                21-JAN-2000;
                                                                                                                                                                                                                        26-DEC-2000; 2000WO-US34263.
                                                                                                                                                                                                                                                 26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                   22-OCT-2001 (first entry)
                                                                                                                                                                                                                                                                                                                        leukaemia.
                                                                                                                         19-0CT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               __
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N
          2001-442253/47
                                  QΑ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qdvltqpssvsgslgqrvsitcsgsssniggnayvgwyqqvpgsaprllisattdrasgi 60
                                                                                                            -2000;
-2000;
AAI58663
                                 Liu C
Wang Z
Zhou
                                                                                   HYSEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111 AA;
                                                                                                           ; 2000US-0488725.
2000US-0552317.
2000US-0598042.
2000US-0620312.
2000US-0653450.
2000US-0662191.
2000US-0693036.
2000US-0727344.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                1 C,
1 Z,
u P,
                                                                                     INC
                                               Asundi V,
Wehrman T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein; 147 AA
                                  Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                             2652
                                                           Chen
                                              Chen R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 564; DB 21; Pred. No. 2.3e-38;
                                  Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                 , Ma Y,
Xue AJ,
anac RT;
                                             Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                             Ren F,
Zhang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       111
                                                          Ή,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                        Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                          Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
```

```
RESULT
AAB36209
                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                            WPI; 200
N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polypucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system disease, such as alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the
                                                                                                                                                                                                                                                                                     Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening,
                                                                                                                                     27-MAR-1998;
                                                                                                                                                          27-MAR-1998;
                                                                                                                                                                                                        US6135941-A
                                                                                                                                                                                                                              HOMO
                                                                                                                                                                                                                                                                                                            15-FEB-2001
                                                                                                                                                                                                                                                                                                                                 AAB36209;
                                                                                                                                                                                                                                                                                                                                                       AAB36209 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C.N.S disorders.
Note: The sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel nucleic acids and such as central nervous
                                                                                                              (INCY-) INCYTE PHARM INC
                                                                                                                                                                                 24-OCT-2000
                                                                                                                                                                                                                                                 infection; autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      assays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example
                                                                                                                                                                                                                                                                                                                                                                                                               08
                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -
                                                                                                                                                                                                                                                                                                                                                                             w
                                                                                                                                                                                                                                                                                                                                                                                                            2001-030926/04
DB; AAC66525.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                     qsvltqppsvsgapgqrvtisctgsssnigagydvhwyqqlpgtapklliygnsnrpsgv
                                                                                                                                                                                                                                                                                    immune
                                                                                                                                                                                                                                                               immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for receptor activity, arthritis and inflammation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4; SEQ ID NO 2652; 10078pp; English
                                                                                         Yue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                   system
                                                                             Au-Young
                                                                                         Ξ
                                                                                                                                                                                                                                                             system associated protein; HISAP-7; immune disorder;
                                                                                                                                     98US-0049672
                                                                                                                                                            98US-0049672
                                                                                         Lal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                data
                                                                                                                                                                                                                                                                                                                                                       protein;
                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                  associated protein HISAP-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69.0%;
                                                                             Ţ,'n
                                                                                                                                                                                                                                                 disease; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polypeptides, useful system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for this patent
                                                                                        Corley NC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Score 389; DB; Pred. No. 3.5e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                       236
                                                                                                                                                                                                                                                                                                                                                       A
                                                                                        Guegler KJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               did
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for treating disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                       Baughn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              part
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      leukaemias
                                                                                                                                                                                                                                                                                                                                                                                                               132
                                                                                                                                                                                                                                                                                                                                                                                                                                    111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                           79
```

۳.

New human immune system associated proteins (HISAP) and polynucleotides encoding the HISAP, useful for diagnosing, treating or preventing immune or cell proliferative disorders or infections -

Claim

٠.

Column

59-62;

54pp;

English

```
RESULT
ABG12886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy technique to restore normal activity of (II) or to treat disease states involving
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           adult respiratory distress syndrome, anaemia, asthma, atherosclerosis, Crohn's disease, irritable bowel syndrome, multiple sclerosis, myasthenia gravis, osteoarthritis, rheumatoid arthritis, scleroderma, systemic lupus
                                                                                                                                                   New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                         31-MAR-2000;
23-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              erythematosus, arteriosclerosis, cirrhosis and cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 number of human immune system associated proteins (HISAPs). These coused in the diagnosis and treatment of various autoimmune disorders infections and cell proliferation diseases. The diseases include AII
                                                                                                               Claim
                                                                                                                                                                                                             N-PSDB;
                                                                                                                                                                                                                                                    Drmanac
                                                                                                                                                                                                                                                                              (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                  30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                         W0200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABG12886;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABG12886 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG-VFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                            supplement;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qsvltqppsvsgapgqrvtisctgsssnigagydvhwyqqlpgtapklliygsrnrpsgv
                                                                                                                                                                                                            2001-639362/73
DB; AAS77073.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pdrfsgsksgtsasla1tglqaedeadyycqsydsslsgvvfgggtkltvlg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human diagnostic protein #12877.
                                                                                                               20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chromosome
                                                                                                                                                                                                                                                    RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                               SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      236 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           invention provides the coding and protein sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                  Liu C,
                                                                                                                                                                                                                                                                                                       2000US-0540217.
2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            medical i
                                                                                                            No 43245; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68.9%;
67.9%;
                                                                                                                                                                                                                                                    Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene mapping; gene
maging; diagnostic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    249 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 388.5; DB 2
Pred. No. 6.1e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         genetic d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                            disorder
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       forensic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AIDS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
```

```
ARUSULT
AAUU2620
ID AAUU
XX AAUU
XX AAUU
XX AAUU
DT 29-A
XX AAUI
DE Anti
XX Anti
KW hear
XX Home
XX Home
XX Home
XX 119-A
XX 119-A
XX 12-C
XX 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess blodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. ABG00010-ABG00377 represent novel human diagnostic amino acid sequences of the invention.

Note: The sequence data for this patent did not appear in the printed appear for interpretation, but was obtained in electronic format directly from WIPO
AAU02501-AAU02635, and AAU02641-AAU02748 represent the amino acid sequences of anti-adipocyte monoclonal antibody heavy chain, light chain, and heavy chain complementarity determining regions (CDR) of thinvention. The antibodies can be used in the treatment of obesity and obesity related diseases. The antibodies can be used to deliver drugs pro-drugs directly to the fat mass of an obese patient or the antibody
                                                                                                                                                                                                                                                           Panel of specific whole adipocytes i related diseases -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAU02620;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAU02620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                      Claim 1;
                                                                                                                                                                                                                                                                                                                                                                              N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Antibody; adipocyte;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Anti-adipocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Edwards BM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CAMB-) CAMBRIDGE ANTIBODY TECHNOLOGY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200127279-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    heart disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94 pnrfsgsksgntasltvsglqaedeadyycssyagsnslifgggtrltvlg 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gsaltqppsasgslgqsvtfscsgtssdignynyvswyrqhpgkapklmiyevtkrpsgv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                         2001-282031/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                              AAS03520
                                                                                                                                                                                                      Page 167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Main SH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000WO-GB03900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0158812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complementarity determining region;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    monoclonal antibody light chain, FAT
                                                                                                                                                                                                                                                                                        is used
                                                                                                                                                                                                                                                                                                                      binding
                                                                                                                                                                                                   182pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein; 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68.6%;
65.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               heavy chain; light chain; obesity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vaughan
                                                                                                                                                                                                                                                                                     g members
                                                                                                                                                                                                      English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 387;
Pred. No. 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŢŢ;
                                                                                                                                                                                                                                                                                     rs of antibody molecules which bind treatment of obesity and obesity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 22;
3.5e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                        of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93
```

0

유

```
ARESULT ANY SIZE IN ANY SIZE I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          by complement mediated lysis. The antibodies may be labeled with a detectable label such as radiolabel, fluorescent or chemical group and used in methods of diagnosis in human subjects e.g. to determine the presence of adipocyte antigen on the surface of an adipocyte to detect or determine the presence or level of adipocytes in a call or tissue sample.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Variable light chain; single chain antibody; scFv; human; HIb-2; glycoprotein Ib alpha; platelet; aggregation; antiaggregant; antithrombotic; thrombus; therapy; diagnostic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The antibodies can be used as an alternative means of treatment for obese patients other than undergoing surgery to remove excess fat. Antibodies for different types of fat deposits can also be produced e.g. intraabdominal fat associated with heart disease.
     WPI;
                                                         Miller JL;
                                                                                                                                                                     30-OCT-1998;
                                                                                                                                                                                                                        29-OCT-1999;
                                                                                                                                                                                                                                                                               11-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Anti-platelet glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY95205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      can be used adipocytes o
                                                                                                                                                                                                                                                                                                                                     WO200026667-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY95205 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Region
                                                                                                            (MILL/) MILLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVL 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qsvltqpasvsgspgqsitisctgtssdvggynyvswyqqhpgkapklmiyevnkrpsgv
  2000-365744/31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pdrfsgsksgntasltvsrlqaedeadyycssyagndsvlfgggtkltvl 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity 65.572; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a therapeutic itself. Antibodies binding specifically be used to activate the immune system to destroy the
                                                                                                               ч
                                                                                                                                                                     98US-0106275
                                                                                                                                                                                                                           99WO-US25495
                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
99..109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note=
90..98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note=
51..57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note=
36..50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note=
23..35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58..89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                           /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68.4%;
65.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                                            "complementarity determining region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "framework region
                                                                                                                                                                                                                                                                                                                                                                                           "framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "complementarity determining region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "framework region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "complementarity determining region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ib human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 386; DB 22;
Pred. No. 4.6e-24;
7; Mismatches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HIb-2 VL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
```

21;

Length

1;

Qy

밁

Š

```
which is directed against platelet glycoprotein Ib (GPIb). The HIB CS series of scFv was isolated from a human synthetic VH and VL scFv (1) library by 3 rounds of phagemid selection against transfected CHO (CC cells expressing the GPIb alpha component of the GPIb/IX/V complex (CC nother surface, followed by a 4th round of selection against CC washed human platelets, and 2 final rounds in which attempts were made to displace scFv from washed platelets by flooding with (CC murine monoclonal antibody or mimotope peptide (see AAY95229). Whether displayed as surface proteins on a phagemid or secreted (CC as free scFv by Escherichia coli, the HIB scFv clones are capable (CC platelets. The scFv are composed of native human protein sequences (CC platelets. The scFv are composed of native human protein sequences (CC purposes. They provide a new class of antithrombotic agents, or useful for the prevention of platelet-dependent thrombi in (CC diseased arteries, bypass graffs, dialysis etc., and can also be (CC used as diagnostic reagents. Methods of inhibiting aggregation of platelets, of binding human platelet GPIb alpha and of selecting a vH or VL region of an antibody that inhibits platelet aggregation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isolated nucleic acid molecule glycoprotein Ib alpha molecule
Sequence
                                                                                 are claimed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inhibit platelet aggregation
                                                            The
                                           from the HIb-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Page -; 89pp; English.
                                                            present sequence is not shown in
    109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               single chain antibody
  A
                                        VL sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               encoding anti-human platelet
                                        given in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   light chain variable (scFv) HIb-2 (see AA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          producing
                                      the specification but n Fig 6 (see AAY95204).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /ariable region
(see AAY95209),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antibodies which
```

```
Qy
                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                             Gene library;
                                                                                                                                                Amino acid sequence of protein seq Id No.
                                                                                                                                                                  30-NOV-2001
                                                                                                                                                                                     AAG65569;
                                                                                                                                                                                                       AAG65569 standard;
                                    22-FEB-2000;
                                                      22-FEB-2001; 2001WO-JP01298
                                                                                           WO200162907-A1
                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                  60 pdrfsgsksgtsaslaisglrsedeadyycaawddslsgvfgggtkltvl 109
                                                                                                                                                                                                                                                                     61 PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVL
                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                1 QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                     qsvltqppsasgtpgqrvtiscsgsssnigsn-yvywyqqlpgtapklliyrnnqrpsgv
                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                            Conservative
                                     2000JP-0050543
                                                                                                                                                                  (first entry)
                                                                                                                              immunoglobulin;
                                                                                                                                                                                                      protein;
                                                                                                                                                                                                                                                                                                                                   68.48;
                                                                                                                                                                                                                                                                                                                            16;
                                                                                                                                                                                                       113
                                                                                                                                                                                                                                                                                                                                   Score 385.5; DB Pred. No. 5e-24;
                                                                                                                              antibody library; human
                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                 94.
                                                                                                                                                                                                                                                                                                                             19;
                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                         59
```

(MEDI-) MEDICAL & BIOLOGICAL LAB CO LTD.

۲

Akahori Y,

Iba

ĸ

Morino K,

Shinohara

ž

Takahashi

Z

```
X TO CONTRACT CONTRAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 76
                New fusion protein, useful for diagnosis of diabetes type I metabolic diseases, is reactive with autoantibodies against glutamate decarboxylase and islet cell antigen .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to producing gene libraries, comprising immunoglobulin light and heavy variable region. The method involves selecting light chain that binds with the heavy chain product to produce a functional conformation, producing a gene library comprising a collection of these light chain variable genes, and combining with gene library of heavy chain variable genes. The method is used for production of gene and antibody libraries.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Producing gene libraries and antibody libraries, involves s
light chain that binds to a heavy chain product to produce
formation, and producing a gene library of the light chain
                                                                                                                                                                                                                                                                                                           10-APR-2000;
25-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       glutamate
                                                                                                                                                                                                         Richter W,
                                                                                                                                                                                                                                                          (LABO-)
                                                                                                                                                                                                                                                                                                                                                                                          29-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                              31-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EP1149914-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Autoantigen; fusion protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human autoantibody MICA-6 variable region heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAG80216 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polyglandular autoimmune syndrome; autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAG80216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Examples;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               formation, and producing a gene regions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0kuno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   æ
                                                                                                                             2001-640702/74.
)B; AAI68765.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pdrfsgsksgtsaslaitgfqaedeadyycqsydsslsghvvfgggtkltvlg 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG--VFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qavltqpssvsgvpgqrvtisctgsssnigagydvhwyqqlpgtapklliygnsnrpsgv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-565420/63.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76;
                                                                                                                                                                                                                                                          LABOR KOCH MERK GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      region;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         en; fusion protein; islet cell antigen; MICA autoantibody; decarboxylase; diabetes mellitus type I; stiff-man syndrome; ular autoimmune syndrome; autoimmune disorder; IA2; GAD65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   p 169-170; 181pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           113
                                                                                                                                                                                                      Rickert M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                          2001EP-0107702
                                                                                                                                                                                                                                                                                                           2000DE-1017782
2000DE-1025840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    heavy chain; MICA-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein; 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68.3%;
67.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              385;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 22;
.7e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        involves selecting a to produce a functional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                              both
                                                                    and other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
```

```
RESULT
AAB52208
      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 72
This invention relates to a human anti-hepatitis B monoclonal antibody. Included in the invention are polynucleotide sequences AAC99948 - AAC96955 which encode fragments of the heavy and light chains of the antibody. Proteins and peptides represented by sequences AAB52185 - AAB52210 are fragments of the anti-hepatitis B light and heavy chains.
                                                                                                                                                                                                                (NISN )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polyglandular autoimmune syndrome or other autoimmune conditions associated with AAb against GAD65 or IA2. (I) provides a rapid and simple diagnosis of high specificity and sensitivity, capable of recognizing antibodies against both IA2 and GAD65, simultaneously. Unlike known fusions, where the GAD65 component is at the V-terminus, (I) contains correctly folded conformational epitopes that can react with most MICA autoantibodies. This sequence represents the human autoantibody MICA-6 variable region heavy chain used in the method of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This invention describes a novel fusion protein (I) that has, at its N-terminus, one or more epitopes that bind specifically to autoantibodies (AAb) against the islet cell antigen IA2 and, at its C-terminus, one or more epitopes that bind specifically to antibodies (Ab) directed against the glutamate decarboxylase GAD65. (I), also nucleic acid (II) encoding it, vectors containing (II) and transformed cells, are useful for diagnosis and prognosis of diabetes mellitus type 1, stiff-man syndrome,
                                                                                          Claim 21; Page
                                                                                                                                                                                                                                                             09-MAR-1999;
                                                                                                                                                                                                                                                                                           09-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                      JP2000253878-A
                                                                                                                                                                                                                                                                                                                                                                                                                antiinflammatory;
                                                                                                                          hepatitis
                                                                                                                                     Novel anti-hepatitis
                                                                                                                                                                                                                                                                                                                         19-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                Anti-hepatitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human anti-HBs antibody light chain protein fragment SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB52208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB52208 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 34; 68pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                    2000-675345/66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rfsgsksgntasltvsglqaedeadyyctsyagsnnlvfgggtkltvlg
                                                                                                                                                                                                                 NISSHINBO
MEIJI MILK
                                                                                                                                                                       AAC96953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                          œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                   MILK PROD
                                                                                            18;
                                                                                                                                                                                                                                                               99JP-0061930
                                                                                                                                                                                                                                                                                           99JP-0061930
                                                                                                                                                                                                                                                                                                                                                                                                                              B monoclonal antibody; human;
                                                                                                                                                                                                                                  IND INC
                                                                                                                                                                                                                                                                                                                                                                                                                hepatotrophic
                                                                                         27pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68.3%;
66.1%;
                                                                                                                                      B monoclonal antibody used for the prevention of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 385; DB 22;
No. 5.9e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                              hepatitis B; prevention;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 117;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
```

Qy В Q

밁

```
RESULT
AAG62963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Best 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
            and/or VL variable domain and capable, when displayed on the surface of filamentous bacteriophage particles or in the case of a specific binding member comprising the D5 VH and/or VL variable domain when bound to human serum amyloid protein, to pass through a mammalian blood brain barrier (BBB). The panel is useful for the selection of specific binding members with a desired property such as ability to cross BBB, ability to bind endothelial cells or other brain cell antigen, ability to bind areas of inflammation in the brain or BBB breakdown or ability to bind intracellular adhesion molecules and to bind transferrin receptor. The antibodies are useful in diagnosis, prophylaxis and
                                                                                                                                                                                                                                                                   The present sequence represents an antibody variable light chain (Variament. The fragment is used to produce a mixture or panel of 5 different specific binding members, each comprising an antibody VH
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mixture or panel of antibodies for selecting specific binding membe that cross the blood brain barrier, for use in delivering different
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              endothelial cell; brain cell antigen; inflammation; adhesion mol transferrin receptor; neurological disease; Alzheimer's disease; prion disease; AIDS-related dementia; epilepsy; brain injury.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Antibody; light endothelial cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Also included in the invention are PCR primers AAC96956 - AAC96977 which are used in the construction of the antibody. The antibody exhibits antiinflammatory, and hepatotrophic activity, and can be used in a drug effective at preventing hepatitis B infection.
                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Page 106; 109pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Webster C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200144300-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAG62963;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAG62963 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                             molecules and treating neurological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CAMB-) CAMBRIDGE ANTIBODY TECHNOLOGY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG-VFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qsvltqppsvsgapgqrisiscigsssnigagydvqwyqqlpgtapkllifvninrpsgv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-398131/42.
DB; AAH42407.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pdrfsgsksgtsaslditglqaedeadyycqsydsslsgyvfgsgttvtvlg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Osbourn J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ight chain; VL; amyloid protein; blood brain barrier;
cell; brain cell antigen; inflammation; adhesion mol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000WO-GB04501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0170599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68.0%;
  ies are useful
animal body,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       variable light chain fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ward G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 383.5;
Pred. No. 7.4e
L4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Miller K;
                                                                                                                                                                                                                                                                                                                                                                                                                               diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; DB 2
neurological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               molecule;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           members
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲,
```

ρ

QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI

Query Match Best Local Matches 7

l Similarity 72; Conserv

Conservative

19;

Pred. No. 2.1e9; Mismatches Score 382; Pred. No. 2.

DB 21; 2.1e-23; nes 20;

Length Indels

0;

Gaps

0;

60

67.7%;

Sequence

249 AA

```
RESULT
AAB36083
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                          The present sequence is a recombinant human antibody scFv. Antibody TNI1 reacts with the long form of human Tenascin-C (TN-C). The epitope recognised by TNI1 is located inside domain C of TN-C. TNI1 is therefore only capable of recognising TN-C isoforms containing domain C (cTN-C). TNI1 is useful for detecting the presence of TN-C isoforms in vitro or in vivo for diagnosing pathologies expressing the cTN-C isoforms of TN-C.
                                                                                                                                                           Ligands used for diagnosis capable of identifying the tenascin-C -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB36083 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and traumatic brain injury occurring within the brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      as Alzheimer's disease, prion disease, AIDS-related dementia, epilepsy and traumatic brain injury and any diseases involving inflammation
                                                                                                                                Disclosure; Page 5-6; 31pp; English.
                                                                                                                                                        tenascin-C
                                                                                                                                                                                                        WPI; 2000-687225/67
N-PSDB; AAC67868.
                                                                                                                                                                                                                                          Zardi L;
                                                                                                                                                                                                                                                                                        20-APR-1999;
                                                                                                                                                                                                                                                                                                               19-APR-2000; 2000WO-EP03550
                                                                                                                                                                                                                                                                                                                                        26-OCT-2000
                                                                                                                                                                                                                                                                                                                                                              WO200063699-A1.
                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                      Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Recombinant human antibody scrv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB36083;
                                                                                                                                                                                                                                                               (PHIL-) PHILOGEN SRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 snrfsgsksgntasltisglqaedeadyycssyttrstrvfgggtkltvlg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    μ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                       neoplasias.
                                    useful for the
                                                                                                                                                                                                                                                                                                                                                                                                                        antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 72; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                        99IT-FI00094.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67.78;
64.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            brain or central nervous system
                                   preparation
                                                                                                                                                                                                                                                                                                                                                                                                                        TN11;
                                                                                                                                                                    and treatment of human neoplasias, tenascin-C isoform containing doma
                                                                                                                                                                                                                                                                                                                                                                                                                        Tenascin-C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 382; DB 22; Pred. No. 9.7e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                               TN11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                   of formulations
                                                                                                                                                                                                                                                                                                                                                                                                                        TN-C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20;
                                                                                                                                                                                                                                                                                                                                                                                                                      domain
                                   for the treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                      C-containing
                                                                                                                                                                     sias, are
domain C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                     of.
                                    0f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
RESULT
AAY58235
  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                    of the c-erbB-2 receptor, the protein product of the HER/neu oncogene. The scFv F5 antibody binds to the epitope of the c-erbB-2 receptor that is bound by F5 antibodies. On binding the c-erbB-2 receptor, the antibodies is transported into the cell. The c-erbB-2 receptor is a marker protein which is overexpressed by 30-50% of breast carcinomas and other adenocarcinomas, and thus provides a useful cell surface marker for specifically targetting tumour cells. The antibodies of the invention are used as tumour-targetting molecules for diagnosis and treatment. The antibodies can be attached to effector molecules. The effector molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Key
Region
                                                                                                                          This sequence represents an internalising humanised antibody, serv F5, which specifically binds to the extracellular domain
                                                                                                                                                                                 Novel internalizing antibodies used
                                                                                                                                                                                                         N-PSDB;
                                                                                                                                                                                                                                                                                      24-APR-1998;
12-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                     W09955367-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Internalising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY58235 standard; Protein;
  radionuclides; ligands
             may include cytotoxins
                                                                                                                                                             Claim
                                                                                                                                                                                                                                           Marks
                                                                                                                                                                                                                                                                                                                       23-APR-1999;
                                                                                                                                                                                                                                                                                                                                              04-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                      Region
                                                                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY58235;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         snrfsgsksgntasltisglqaedeadyycssyttrstrvfgggtkltvlg 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000-072168/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                          'n,
                                                                                                                                                             3; Page
                                                                                                                                                                                                                                                                 ) UNIV CALIFORNIA
                                                                                                                                                                                                         AAZ58235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         c-erbB-2
                                                                                                                                                                                                                                           Poul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                          81; 85pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              anti-c-erbB-2
                                                                                                                                                                                                                                                                                      98US-0082953.
99US-0250056.
                                                                                                                                                                                                                                                                                                                       99WO-US07395
                                                                                                                                                                                                                                                                                                                                                                                                      /note=
225..2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers 31..35
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note=
157..1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50..66
                                                                                                                                                                                                                                                                                                                                                                                           /note=
                                                                                                                                                                                                                                                                                                                                                                                                                           186..192
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tumour-specific;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor; marker;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .108
                                                                                                                                                                                                                                                                                                                                                                                                                                                              .170
  such as
             such
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "VH-CDR2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "VH-CDR3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                "VL-CDR2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                "Light chain
                                                                                                                                                                                                                                                                                                                                                                                           "VL-CDR3"
                                                                                                                                                                                                                                                                                                                                                                                                                                      determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246
             as ricin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              receptor antibody scfv
 growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             internalisation; non-immunogenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                      variable region (VL) complementarity
region 1 (CDR1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  variable region (VH) complementarity
region 1 (CDR1)"
                                                                                                                                                                                 to treat cancer cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cancer;
           abrin or Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        drug targetting;
therapeutic agents such
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              £5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198
```

```
AAU02577
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CC as vinblastine, vindesine or melphalan; ribozymes; or antisense CC molecules. The antibodies may also be used for in vivo or in vitro CC detection and/or quantitation of the c-erb-2 receptor and thus diagnosis CC and/or localisation of cancers characterised by expression of c-erb-2. CC their success has been limited. The utility of prior art antibodies has been limited and toxicity reduced if high affinity CC immunogenicity, low binding affinity, and poor tumour penetration. CI Immunogenicity could be avoided and toxicity reduced if high affinity CC tumour specific human antibodies were available. However, the production of human monoclonal antibodies using conventional hybridoma technology has proven difficult. Also, most of the antibodies produced react with CC antigens that are also common to non-malignant cells, which makes them CC unsuitable for use as tumour-targetting molecules. The antibodies of the invention overcome these difficulties, as they are targetted to a cre human in criticin and avoid the problem of immunogenicity as they
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                 Panel of specific binding whole adipocytes is used i related diseases -
                                                                                                                                          WPI; 2001-282031/29.
N-PSDB; AAS03477.
                                                                                                                                                                                                                                           12-OCT-1999;
                                                                                                                                                                                                                                                                      11-OCT-2000;
                                                                                                                                                                                                                                                                                                   19-APR-2001
                                                                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAU02577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                  Edwards BM,
                                                                                                                                                                                                                                                                                                                               W0200127279-A1
                                                                                                                                                                                                                                                                                                                                                                                     Antibody; adipocyte; heavy chain; light chain; obesity; fat; heart disease; complementarity determining region; CDR.
                                                                                                                                                                                                                                                                                                                                                                                                                               Anti-adipocyte monoclonal antibody light chain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAU02577
                                                                                                                                                                                                               (CAMB-) CAMBRIDGE ANTIBODY TECHNOLOGY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG-VFGSGTRLTVLG 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qsvltqppsvsgapgqrvtisctgsssnlgagygvhwyqqlpgtapklllygntnrpsgv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in origin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                        2000WO-GB03900
                                                                                                                                                                                  Main SH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                           99US-0158812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67
                                                                                                                                                                                  Vaughan TJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 68;
                                                                                              y members of antibody molecules which bind
in the treatment of obesity and obesity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 381.5; DB Pred. No. 2.3e-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21;
                                                                                                                                                                                                                                                                                                                                                                                                                                 FAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    194
                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>,,</u>
```

AAU02501-AAU02635, and AAU02641-AAU02748 represent the amino sequences of anti-adipocyte monoclonal antibody heavy chain, chain, and heavy chain complementarity determining regions (Complementarity determining regions)

(CDR)

of the

acid light

Claim 1;

Page 141;

182pp; English.

```
RESULT 14
AAG62957
   δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       invention. The antibodies can be used in the treatment of obesity and obesity related diseases. The antibodies can be used to deliver drugs or pro-drugs directly to the fat mass of an obese patient or the antibody can be used as a therapeutic itself. Antibodies binding specifically to adipocytes can be used to activate the immune system to destroy the cells by complement mediated lysis. The antibodies may be labeled with a detectable label such as radiolabel, fluorescent or chemical group and used in methods of diagnosis in human subjects e.g. to determine the presence of adipocyte antigen on the surface of an adipocyte to detect or determine the presence or level of adipocytes in a cell or tissue sample. The antibodies can be used as an alternative means of treatment for obese patients other than undergoing surgery to remove excess fat. Antibodies for different types of fat deposits can also be produced e.g. intra-
 and/or
                   fragment.
different
                                                                                                                Mixture or panel of antibodies for selecting specific binding members that cross the blood brain barrier, for use in delivering different molecules and treating neurological diseases
                                                                                                                                                                                                       WPI;
                                                   The present
                                                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                         WO200144300-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       endothelial cell; brain cell antigen; inflammation; adhesion molecule;
transferrin receptor; neurological disease; Alzheimer's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Amino acid sequence of variable light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAG62957 standard;
                                                                                                                                                                                                                                        Webster C,
                                                                                                                                                                                                                                                                                                                                       27-NOV-2000; 2000WO-GB04501
                                                                                                                                                                                                                                                                                                                                                                          21-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Antibody; light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                       (CAMB-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qsvltqpasvsgppgqsvtisctgtssdigsynyvswyqqhpgeapklmiyevtkrpsgv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVL 110
                                                                                                                                                                                     2001-398131/42.
bB; AAH42401.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         disease;
                                                                                                                                                                                                                                                                     CAMBRIDGE ANTIBODY TECHNOLOGY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                   Page 103;
ont sequence represents an antibody variable light chain (VL) The fragment is used to produce a mixture or panel of 5 specific binding members, each comprising an antibody VH variable domain and capable, when displayed on the surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110
                                                                                                                                                                                                                                      Osbourn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ĀΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AIDS-related
                                                                                                                                                                                                                                                                                                        99US-0170599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        chain; VL; amyloid protein;
                                                                                 109pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ļ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67.6%;
64.5%;
                                                                                                                                                                                                                                        Ward
                                                                                 English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dementia; epilepsy; brain
                                                                                                                                                                                                                                      ر.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 381;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                        Miller
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 22;
.2e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          blood brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fragment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           G93
                                                                                                                                                   members
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
RESULT 15
AAG65319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Ma
Best Loc
Matches
                                                                                                                                                                                 Ghayur
Duncan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bound to human serum amyloid protein, to pass through a mammalian blood brain barrier (BBB). The panel is useful for the selection of specific binding members with a desired property such as ability to cross BBB, ability to bind endothelial cells or other brain cell antigen, ability to bind areas of inflammation in the brain or BBB breakdown or ability to bind intracellular adhesion molecules and to bind transferrin receptor. The antibodies are useful in diagnosis, prophylaxis and treatment of human or animal body, including neurological diseases, such as Alzheimer's disease, prion disease, AIDS-related dementia, epilepsy and traumatic brain injury and any diseases involving inflammation occurring within the brain or central nervous system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of filamentous
binding member
                                                                                           Novel antibodies and compounds capable of binding to human interleukin-18 useful for treating, e.g., inflammatory dis-
                                                                                                                                  WPI; 2001-550020/61.
N-PSDB; AAH47514.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                     (BADI
                                                                                                                                                                                                                                             10-FEB-2000; 2000US-0181608
                                                                                                                                                                                                                                                                    09-FEB-2001; 2001WO-US04170
                                                                                                                                                                                                                                                                                             16-AUG-2001
                                                                                                                                                                                                                                                                                                                     WO200158956-A2
                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                 nootropic; neurological; antiinflammatory; antiparkinsonian; cardiant; immunosuppressive; antidepressant; neuroleptic; hepatotropic; LT28.
                                                                                                                                                                                                                                                                                                                                                                                           IL-18; interleukin-18; human;
                                                                                                                                                                                                                                                                                                                                                                                                                Anti-IL-18 antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                           30-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAG65319 standard;
                                                                                                                                                                      Lennard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   snrfsgsksgntasltisglqaedeadyycssyttrgtrvfgggtkltvlg
                                                                                                                                                                                                                   ) BASF
                                                                                                                                                                                 AR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   72;
                                                                                                                                                                      SN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               111
                                                                                                                                                                                  Brocklehurst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                     AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bacteriophage particles or in the case comprising the D5 VH and/or VL variable
                                                                                                                                                                                              RW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein;
                                                                                                                                                                                                                                                                                                                                                                                                                  LT28 light
                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67.6%;
64.9%;
                                                                                                                                                                                             Roguska
                                                                                                                                                                                  , MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
Pred.
                                                                                                                                                                                 M, White Mankovich
                                                                                                                                                                                                                                                                                                                                                                                           antibody; antirheumatic; cerebroprotective;
                                                                                                                                                                                                                                                                                                                                                                                                                  chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              381;
No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                sequence.
                                                                                                                                                                                 ۲, ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 22;
..2e-23;
                                                                                                                                                                                 Labkovsky B,
Shorrock CP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e domai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111
                                                                                                                                                                                             Salfeld J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                  JE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

The invention provides isolated antibodies, or antigen-binding portions, that are capable of binding to human interleukin-18 (IL-18). The

inhibit human

IL-18 activity

in,

and treat a

antibodies

capable of binding

Claim autoimmune

36;

Page 42;

91pp;

English

interleukin-18 useful for neurological disorders,

heart

failure,

myocardial infarction,

disorders,

diseases

```
disorder where II-18 is detrimental in, a human subject suffering from, inflammatory disorders (e.g., rheumatoid arthritis, Crohn's disease, inflammatory bowel disease, and osteoarthritis), neurological disorders (e.g., Huntington's chorea, Parkinson's disease, Alzheimer's disease, and stroke), heart failure, myocardial infarction, autoimmune diseases such as autoimmune hepatitis and autoimmune neutropaenia, and mental disorders (e.g., depression and schizophrenia). Treatment with an anti-II-18 antibody may occur before, concurrent, or after administration of a second agent selected from an antibody, or fragment, capable of binding human II-12, methotrexate, anti-tunor necrosis factor, corticosteroids, cyclosporin, rapamycin, FK506, and non-steroidal anti-inflammatory agents. The present sequence represents an anti-II-18 antibody LT28 light chain sequence.
                                                                                                                                                                                                                                                                                                                    Sequence
y Match 67.6%; Score 381; DB 22; Length 111; Local Similarity 67.9%; Pred. No. 1.2e-23; hes 76; Conservative 15; Mismatches 19; Indels 2;
                                                                                            111 AA;
                                                                                                                                                                                         Gaps
                                                                                                                                                                                              2;
```

8 밁 Search completed: August 12, 2002, 09:25:39 Job time: 169 sec β ş Query Match Best Local S Matches 76

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being pu and is derived by analysis of the total score distribution.
430
411.5
411.5
411
409.5
406.5
404.5
404.5
                                                                                                                                                                                                                             Score
                                                                                                                                                                                     614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length: 0
                                                                                                                                                                                                                           Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A_Geneseq_032802:*

1: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1980.DAT:*
2: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1981.DAT:*
3: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1982.DAT:*
3: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1983.DAT:*
5: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1985.DAT:*
6: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1985.DAT:*
6: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1985.DAT:*
7: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1987.DAT:*
9: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1987.DAT:*
100.0
67.9
67.0
66.9
66.7
65.9
65.9
                                                                                                                                                                                                                                                                                                                                                                                                  10:
111:
12:
13:
14:
15:
16:
16:
17:
19:
20:
21:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              747574 segs, 111073796 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-786-015-2
614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          August 12, 2002, 09:22:50;
                                                                                                                                                                                                                                                                                                                                                                                         /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1991.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1992.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1993.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1994.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1995.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1995.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1997.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA2000.DAT: *
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA2001.DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QVQLQESGPSLVKPSQTLSL........DSVPYGLDYWSPGLLLTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1989.DAT:*
/SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1990.DAT:*
                                                                                                                                                                                                                             Length
                   142
120
129
137
137
120
116
120
273
                                                                                                                                                                                                                             В
                                                       14
22
20
14
18
18
20
                                                                                                                                                                                                                             IJ
               AAY82528
AAR66523
AAG66523
AAY22432
AAY22432
AAW30273
AAW30273
AAW30273
AAW305823
                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search time 52.21 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (without alignments)
257.421 Million cell updates/sec
           Carcinoembryonic a Partial B4 Ab vari Humanised anti-CTL TM27 antibody VH c B4 HuVH. Chimeric Heavy chain of Hum TM27 antibody VH c Humanised 1D10 ant TM27 antibody VH c Humanised 1D10 ant
                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                       printed,
```

ALIGNMENTS

RESULT AAY82528

AAY82528;

AAY82528 standard; Protein; 121

A

A new high-affinity monoclonal antibody that is characterized by acid-washed enzyme-linked immunosorbent assay for use in cancer t Carcinoembryonic antigen; CEA; sheep; monoclonal antibody; tumour associated antigen; anti-carcinogenic; cytostatic; cancer therapy. WPI; 2000-375618/32. N-PSDB; AAA08400. Carcinoembryonic antigen affinity antibody heavy chain variable region. 13-JUL-2000 (first entry) Harrison PJ; (KSBI-) KS BIOMEDIX LTD. 28-AUG-1998; 20-AUG-1999; 09-MAR-2000. WO200012556-A1. 98GB-0018915 99WO-GB02729. therapy

Humanised 1D10

```
RESULT
AARA4276
ID AARA
XX AARA4
AC AARA
AC A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention describes a high-affinity monoclonal antibody characterised by an acid-washed enzyme-linked immunosorbent assay (EIA). The antibody is used in cancer therapy. Association of the new antibody with an antigen is favoured over dissociation in vivo and they therefore concentration of antibodies localised at the target sites. Targeting the antibody to a site in vivo is improved. The concentration of antibody does not need to be too high which reduces side-effects and costs of therapy. The present sequence represents the heavy chain variable region of a monoclonal antibody having affinity for carcinoembryonic antigen (CEA, a tumour associated antigen), which is used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Key
Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complementarity determining region; CDR; B4; respiratory syncytial virus; RSV; F protein;
                         Stott
                                                                                                                        06-APR-1992;
                                                                                                                                                                        06-APR-1993;
                                                                                                                                                                                                                           14-OCT-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Monoclonal antibody; mAb; light; heavy; chain; variable; complementarity determining region; CDR; B4; B13/B14; RSV19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Partial B4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                                                                                                                            W09320210-A
                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                               Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR42796 standard; protein;
                                                                       (SCOT-) SCOTGEN LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 S 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           μ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \tt qvqlqesgpslvkpsqtlsltctvsgfsltkygvswvrqapgkalewlggvssgaltayn
                      딘
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 100
21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Page
                      Taylor G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ab variable heavy chain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14;
                                                                                                                        92GB-0007479
                                                                                                                                                                        93WO-GB00725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers 31..35
                                                                                                                                                                                                                                                                                                                                                                                                                                               /label= CDR
50..65
                                                                                                                                                                                                                                                                                                                          /note= "residue
                                                                                                                                                                                                                                                                                                                                                                                                                        /label= CDR
                                                                                                                                                                                                                                                                                                                                                                        'label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English
                                                                                                                                                                                                                                                                                                                                                                          CDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 614; DB 21;
Pred. No. 3.6e-49;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                          not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                            defined
                                                                                                                                                                                                                                                                                                                          in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                       specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
AAG66523
ID AAG6
XX
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SXCCCCCCCCCXXXX
                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 87
                                                      Carreno
O'Hara [
                                                                                                                                                                                                                                                               Human; CTLA4; cytotoxic T lymphocyte associated antigen 4; anti-CTLA4; immunosuppressive; immunomodulator; antiallergic; vaccine; antibody; T cell; humanised antibody; autoimmune disorder; graft rejection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Variable light chain and variable heavy chain sequences derived from bovine anti-RSV F protein monoclonal anti-bodies (mAbs) B4 and B13/B14 (AAR42794-R42797), and murine anti-RSV F protein mAb RSV19 (AAQ49376-Q49377), and their CDR peptides, may be used in the design of fusion proteins (including altered antibodies) which are characterised I the antigen binding specificity of these mAbs (for humanised Abs, see AAR4728-R42801 and AAR42805-R42808).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New antibodies against respiratory syncytial virus - including humanised and chimaeric antibodies, useful for treatment,
                    N-PSDB; AAH76441, AAH76443
                                                                                                                                                              02-AUG-2001
                                                                                                                                                                                     WO200154732-A1
                                                                                                                                                                                                           Synthetic.
                                                                                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                      allergy; heavy chain
                                                                                                                                                                                                                                                                                                              Humanised anti-CTLA4 heavy chain.
                                                                                                                                                                                                                                                                                                                                      22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                             AAG66523;
                                                                                                                                                                                                                                                                                                                                                                                    AAG66523 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NB: the specification is incomplete and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Fig 4; 139pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prevention and diagnosis of infection
                                                                                         (GEMY
                                                                                                               27-JAN-2000; 2000US-0178473
                                                                                                                                      26-JAN-2001; 2001WO-US02653
                                                                                                                                                                                                                                                                                                                                                                                                                                         121 qgllvtvss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  113 PGLLLTVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 palksrlgitrdnsksqvslslntitpedtatyycakcsvgdsgsyactgrkgeyvdawg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYG------LDYWS 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1993-336917/42.
                                2001-483195/52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87; Conser
                                                      D,
                                                                                         GENETICS
                                                                 BM,
                                                      Hinton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                            129
                                                                                         INST INC.
                                                      λ,
                                                                                                                                                                                                                                                                                                                                                                                   Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70.0%;
                                                      Turner K,
Tsurushita
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                    142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 430;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                      Collins N;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                published without claims
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 14;
3.5e-32;
hes 24;
                                                                  ĭ
                                                                 Gray
                                                                  GS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 137;
                                                                  Morris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                  D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 γď
```

Novel antibody-toxic group conjugate comprising

an antibody

```
RESULT
AAY2432
AAY 2432
XX AAY2
XX AAY2
XX AAY2
XX IGG
KW IGG
KW HOMO
XX HOM

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to an antibody-toxic group conjugate comprising CC an antibody that specifically recognises a molecule expressed only on CC activated T cells, and a toxic group. The T cell molecule is CC preferably human cytotoxic T lymphocyte associated antigen 4 (CTLA4). CC The antibody of the invention is a humanised anti-CTLA4 antibody CC comprising a sequence of 128 or 142 amino acids fully defined in the specification. The antibody-toxic group conjugate is useful for CC modulating the immune response in a subject suffering from a disorder CC or condition such as autoimmune disorder, immune response to a graft, CC allergic response or an immune response to a therapeutic protein.
CC The antibody is also useful for research purposes, e.g., in staining CC and isolating CTLA4-bearing cells. The antibody is also useful for CC T-cell typing, for isolating specific II-2 receptor-bearing cells or CC Tegments of the receptor, for vaccine preparation, and for determining the effectiveness of an agent to down-regulate CTLA4 activity. The CC antibody is the heavy chain of humanised anti-CTLA4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                         Misc-difference
                                                                                                                                            Misc-difference
                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IgG antibody; TM27; variable chain; immunoglobulin G; medical therapy;
autoimmune disease; multiple sclerosis; antibody storage; VH; mutein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TM27 antibody
                                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                          Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY22432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY22432 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 15; Fig 10; 123pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               recognizes a molecule expressed only on activated T cells, useful for modulating immune response for treating autoimmune disorder, allergic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TALOSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVP--YGLDYWSPGLLLT :|| |||::::|||||:| | ||:|| ||:|| salmsrltiskdtskngvslklssvtaadtavyycargpphammkrgyamdywgggtlvt
                                                                                                                                                                                                                                                                                                                                                                                                       sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qvqlqesgpglvkpsqtlsltctvsgfsltsygvywvrqppgkglewlgviwaggttnyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               142 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VH chain
                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                    68
                                                              /label=
                                                                                                                    label-
                                                                                                                                                                          label-
                                                                                                                                                                                                                                   'label= T68S
                                                                                                                                                                                                                                                                                            'label- v67L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mutant V67L,
                                                              T73N
                                                                                                                    L70S
                                                                                                                                                                             M69I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 417; DB 22; Pred. No. 5.8e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T68S, M69I, L70S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T73N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
```

```
RESULT
AAR42798
ID AAR4
XX AAR4
AC AAR4
XX 28-A
DT 28-A
DE B4 I
XX MONG
KW COMI
KW COMI
KW resi
XX
OS Chil
                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence is a mutant of the variable heavy (VH) chain of the CC antibody TM27. TM27 is an immunoglobulin G [196] antibody, contained in CC the isotonic pharmaceutical formulation of the invention, along with a CC citrate buffer at a physiologically acceptable pH. The formulations are CC useful in medical therapy, especially for treatment of autoimmune CC disease, and particularly, therapy of multiple sclerosis (using the TM27 CC antibody heavy or light chains). The formulation is useful for improving the storage of an antibody. The antibody formulations are simple and CC effective. The formulations are stable and have improved storage CC properties. The formulations require than prior art formulations. CC Existing antibody formulations require the use both of a stabiliser and a CC buffer. The present invention formulations are stabile and only by citrate buffer in a saline solution at a physiologically preferable pH. The CC injection. The formulation does not use ovalbumin for stabilisation, CC hence avoiding an allergic response to ovalbumin for stabilisation. CC constitution and allergic response to ovalbumin for stabilisation. CC constitution and physiologically preferable formulation cCC constitution and physiologically preferable pH. The constitution and physiologically preferable pH. The constitution are stabilisation and constitution as the site of constitution and physiologically preferable pH. The constitution and physiologically preferable pH. The constitution are successed and also the formulation to be resuspended prior to administration.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                    Monoclonal antibody; mAb; light; heavy; chain; variable; complementarity determining region; CDR; B4; B13/B14; RS respiratory syncytial virus; RSV; F protein; antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1999-458611/38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-MAR-1998;
22-JAN-1998;
                                                                                                                                                                                                                                  AAR42798 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        buffer, have improved storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-JAN-1999;
                                                                                                                                                          28-APR-1994
                                                                                                                                                                                              AAR42798;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Isotonic pharmaceutical antibody formulations comprising a citrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ASTR ) ASTRA AB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-JUL-1999
                                                                                                                                                                                                                                                                                                                                117
                                                                                                                                                                                                                                                                                                                                                                    118 TVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                        v
                                                                                                                                                                                                                                                                                                                                tvss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVP---YGLDYWSPGLLL 117
                                                                                                                                                                                                                                                                                                                                                                                                        salksrlsiskdnsknqfslrlssvtaadtavyycar----drvtatlyamdywgqgslv 116
                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Page 23-24; 30pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98SE-0000766.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-SE00049
                                                                                                                                                                                                                                  protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67.0%; Score 411.5; DB 20 66.1%; Pred. No. 1.5e-30; tive 14; Mismatches 21;
                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

N ..

Chimeric: Bos taurus

Chimeric:

Homo

sapiens

```
ARESULT
AAW30273
ID AAW3
XX AAW3
AC AAW3
XC AAW3
XC AAW3
XC Heav
XC Heav
XC Heav
XC Hum4
KW Inhi
KW heav
XX
                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                       QΨ
                                                                                                                                                                                                                                                                               뫄
                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
          HuM4TS.22; antibody; platelet derived growth beta receptor; PDGF-R bet inhibition; intimal hyperplasia; vasculature; restenosis; angioplasty; heavy chain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Key
Region
                                                       Heavy chain
                                                                              07-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                    bovine anti-RSV F protein monoclonal antibodies (mAbs) B4 and B13/B14 (AAR42794-R42797), and murine anti-RSV F protein mAb RSV19 (AAQ49376-049377), and their Captides, may be used in the design of fusion proteins (including altered antibodies) which are characterised the antigen binding specificity of these mAbs (for humanised Abs, see AAR42798-R42801 and AAR42805-R42808).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stott
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06-APR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-APR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14-OCT-1993
                                                                                                                            AAW30273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Variable light chain and variable heavy chain sequences derived bovine anti-RSV F protein monoclonal antibodies (mAbs) B4 and B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Fig 10; 139pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New antibodies against respiratory syncytial virus -
humanised and chimaeric antibodies, useful for treatm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9320210-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (SCOT-) SCOTGEN LTD
                                                                                                                                                                                     121
                                                                                                                                                                                                            113
                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                _
                                                                                                                                                                                                                                                                                                      μ
                                                                                                                                                  6
                                                                                                                                                                                                                                                                                                                                                                                                         the specification is incomplete and published without claims
                                                                                                                                                                                    qgttvtvss
                                                                                                                                                                                                                                           QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1993-336917/42
                                                                                                                                                                                                            PGLLLTVSS
                                                                                                                                                                                                                               palks rvtmlrdtsknqfslrlssvtaadtavyy cakes vgdsgsyaetgrkge yvdawg
                                                                                                                                                                                                                                                                            qvqlqesgpglvrpsqtlsltctvsgfslssysvswvrqppgrglewlgdasnggiiyyn
                                                                                                                                                                                                                                                                                                                           82;
                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                                                                                     129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and diagnosis of infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Taylor G;
                                                        of HuM4TS.22
                                                                                                                                                                                                                                                                                                                            Conservative
                                                                            (first entry)
                                                                                                                                                                                      129
                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92GB-0007479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93WO-GB00725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50..65
/label= CDR
98..118
/label= CDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /label=
                                                                                                                           Protein; 137
                                                                                                                                                                                                                                                                                                                                       66.9%;
63.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDR
                                                                                                                                                                                                                                                                                                                           13;
                                                                                                                                                                                                                                                                                                                                        Pred.
                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                            Ą
                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                              2 411; DE 70;
NO. 1.8e-30;
                                                                                                                                                                                                                                                                                                                           26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              treatment,
                                                                                                                                                                                                                                                                                                                                              Length 129;
                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         including
                                                                                                                                                                                                                                                       -LDYWS 112
                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ed from
1 B13/B14
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                              60
                                beta;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ьy
                                                                                                                                                                                                                                                                                                                           1;
```

```
This is the amino acid sequence for the heavy chain of HuM4TS.2 novel antibody which specifically binds to the platelet derived growth beta receptor (PDGF-R beta). but not within the fifth extracellular Ig-like domain, where the antibody inhibits PDGF BB-induced proliferation of a cell expressing the PDGF beta receptor the processing control of the process of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chang
                                                                treatment of disorders related to PDGF activity such as involving proliferation of smooth muscle cells, and inc
                                                                                                                                                                                                                                                                                                              Claim 6; Fig
                                                                                                                                                                                                                                                                                                                                                      Antibodies to platelet derived growth factor beta PDGF BB-induced proliferation of cells expressing particularly for inhibiting intimal hyperplasia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Binding-site
Sequence
                                                                                                                  in the vasculature of a mammal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (PROT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-OCT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W09737029-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (BOEF )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1997-503114/46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BOEHRINGER MANNHEIM
PROTEIN DESIGN LABS
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAT90980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Landolfi
  137
                                            following
                                                                                                                                                                                                                                                                                                              2C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers 58.137
/note= "Mature Prote 49.54
/note= "Complementar 68.84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96US-0621751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97WO-US04198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note=
20
/note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "Optionally
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "Complementarity
116..126
                                                                                                                                                                                                                                                                                                         87pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "Optionally
protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NF,
                                            angioplasty.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Optionally protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Optionally
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Complementarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Complementarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Mature Protein'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Optionally protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Optionally protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Optionally
protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein"102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Optionally Leu, of the mature pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Martin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ٦
                                                                                                             thod of inhibiting intimal hyperplasia The antibodies can be used for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Asn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ile
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ile at position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Val at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Leu, Ile,
protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ile
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ser at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    at
                                                                                                                                                                                                                                    to the platelet derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  position 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       position 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                          receptor - inhibit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Met
                                                                     including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of mature
                                                                                                                                                                                                                                                                                                                                                                                    receptor,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of.
                                                                                         disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the mature
                                                                                                                                                                 receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         74
```

'n

```
RESULT
AAY22429
ID AAY2
XX AAY2
XX AAY2
XX IGG
CKW heav
OSS HOMC
XX WO99
PM WO99
XX O9-1
PR 09-1
PR 22---
XX ISO
PT buf
XX ISO
PT buf
XX ISO
PT buf
CC The
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                          CC This sequence represents the variable heavy (VH) chain of the CC antibody TM27. TM27 is an immunoglobulin G (IGG) antibody, contained in CC the isotonic pharmaceutical formulation of the invention, along with a CC citrate buffer at a physiologically acceptable pH. The formulations are CC useful in medical therapy, especially for treatment of autoimmune CC disease, and particularly, therapy of multiple sclerosis (using the TM27 CC antibody heavy or light chains). The formulation is useful for improving CC the storage of an antibody. The antibody formulations are simple and CC effective. The formulations are stable and have improved storage CC properties. The formulations require than prior art formulations. CC Existing antibody formulations require the use both of a stabiliser and a buffer. The present invention formulations are stabilized only by citrate CC buffer in a saline solution at a physiologically preferable pH. The CC avoidance of low pH prevents undesirable reaction as the site of CC injection. The formulation does not use ovalbumin Also the formulation CC does not require lyphilisation. Also the formulation of constantiation that the two process and also recently process and also require the formulation to the formulation of the process and also recently process.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 12; Page 11; 30pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1999-458611/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Isotonic pharmaceutical antibody formulations comprising a citrate buffer, have improved storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Flink O,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-MAR-1998;
22-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W09937329-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IgG antibody; TM27; variable chain; immunoglobulin G; medical therapy;
autoimmune disease; multiple sclerosis; antibody storage; VH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY22429;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY22429 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ASTR ) ASTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 S 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                salksrltiskdtsknqvslklssvtaadtavyycart---gtrgyffdywgqgtlvtvs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TALQSRLSVTRDTSKSQESLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chain
                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Petren
      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                              formulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ϋ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98SE-0000766
98SE-0000170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-SE00049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65.3%;
                                                              to be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 2.7e-30;
8; Mismatches 21;
                                                           resuspended prior
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                              to administration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                        citrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲,
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW05823
                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                 B-cell lymphoma; humanised antibody; bispecific antibody; myeloma; leukaemia; hybridoma; monoclonal antibody.
               WO9626964-A1
                                                        Misc-difference
                                                                                Misc-difference
                                                                                                          Misc-difference
                                                                                                                                   Misc-difference
                                                                                                                                                            Misc-difference
                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                            Humanised
                                                                                                                                                                                                                                                                                                                                                                                                                           AAW05823;
                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                          Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                            27-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW05823 standard; Protein; 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118 TVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                            œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tvss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     salksrvtmlkdtsknqfslrlssvtaadtavyycar----drvtatlyamdywgqgslv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qvqlqesgpglvrpsqtlsltctvsgfsltaygvnwvrqppgrglewlgm1wgdgntdyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                          Mus
                                                                                                                                                                                                                                                                                                                                                                                           1D10 antibody heavy chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                         gp
                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                 sapiens;
                                                                                                                                                                                                                                                             /label= CDR3
                                                                                                                                                                                                                                                                               /label= CDR2
98..105
                                                        82
                                                                                78
                                                                                                           73
                                                                                                                                   71
                                                                                                                                                           67
                                                                                                                                                                                    37
                                                                                                                                                                                                              30
                                                                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                                /label- CDR1
50..65
                                                                                                                                                                            /note-
                                                /note-
                                                                        /note-
                                                                                                  /note=
                                                                                                                           /note-
                                                                                                                                                   /note-
                                                                                                                                                                                                     /note-
                                                                                                                                                                                                                              /note=
                                                                                                                                                                                                                                                       /note= "human framework residue 27 is substd.
                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66.2%;
65.3%;
                               "human framework residue 82 i consensus amino acid of the murine framework residue"
                                                                                                                                                                                            "human framework residue 30 jequivalent murine framework
                                                                        "human framework residue 78
                                                                                                  "human
                                                                                                                            "human framework residue 71
                                                                                                                                                    "human
                                                                                                                                                                            "human framework residue 37
                                                                                                                                                                                                                               "human
                                                                equivalent
                                                                                        equivalent
                                                                                                                  equivalent
                                                                                                                                           equivalent
                                                                                                                                                                   equivalent
                                                                                                                                                                                                                      equivalent
                                                                                                                                                                                                                                              equivalent murine framework residue"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 4.4e-30; 
i; Mismatches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 406.5;
                                                                                                  framewoek residue 73
                                                                                                                                                    framework residue 68 is substd.
                                                                                                                                                                                                                              framework residue 29
                                                                murine
                                                                                         murine
                                                                                                                   murine
                                                                                                                                           murine
                                                                                                                                                                    murine
                                                                                                                                                                                                                      murine
                                                                                                                   framework
                                                                                                                                           framework
                                                                                                                                                                    framework
                                                                framework
                                                                                         framework
                                                                                                                                                                                                                       framework
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                  is
                                                                                                                           is substd.
                                                                                                                                                                                            is substd.
k residue"
                                                                is substd.
( residue"
                                                                                                                                                                            is substd
                                                                                                                                                                                                                               18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                         is substd.
residue"
                                                                                                                  residue"
                                                                                                                                           residue"
                                                                                                                                                                    residue"
                                                                                                                                                                                                                       residue"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7;
                                               bу
                                                                       γď
                                                                                                                           Ϋ́
                                                                                                γď
                                                                                                                                                   ьy
                                                                                                                                                                           ьy
                                                                                                                                                                                                    γď
                                                                                                                                                                                                                             γģ
                                                                                                                                                                                                                                                       ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
```

06-SEP-1996

```
RESULT
AAY22430
                                                                                                                                                                                                                                                                                                                                                               DЪ
                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                     δã
                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chain (AAW05829) consists of human IC4 heavy chain variable region framework (substd. at 9 positions with mouse or consensus human maino acids) and complementarity determining regions from the murine 1D10 antibody specific for a 28/32 kba heterodimeric antigen present on the surface of malignant B-cells. It can be coexpressed with humanised 1D10 light chain (see also AAW05828) in e.g. mouse myeloma NSO cells. Humanised antibody fragments can be incorporated into novel bispecific antibodies reactive with both effector cell antigens (see also AAW05824-25, AAW05826 and AAW05830) and malignant B-cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 14; Fig 4b; 85pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gingrich R,
            WO9937329-A1
                                                 Misc-difference
                                                                                        Homo sapiens
                                                                                                              autoimmune d
heavy chain.
                                                                                                                                                                 TM27 antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The variable region (AAW05823) of the humanised 1D10 antibody heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               malignant B cells - also their humanised forms and hybridom producing them, useful for treating or preventing leukaemia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New bispecific antibody reactive with both {\tt T} or NK cells and malignant {\tt B} cells - also their humanised forms and hybridomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1996-412742/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-FEB-1996;
                                                                                                                                                                                             28-SEP-1999
                                                                                                                                                                                                                       AAY22430;
                                                                                                                                                                                                                                              AAY22430 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (IOWA-) IOWA IMMUNOTHERAPY INVESTIGATORS
                                                                                                                                          IgG antibody; TM27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lymphoma and myeloma
                                                                                                                                                                                                                                                                                                              116
                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                            Ø
                                                                                                                                                                                                                                                                                                                                      S 121
                                                                                                                                                                                                                                                                                                                                                             aafisrltiskdtsknqvslklnsltaadtavyycarndr----yamdywgqgtlvtvs
                                                                                                                                                                                                                                                                                                                                                                                    TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                                                                                                                                                              116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROTEIN DESIGN LABS INC
                                                                                                                             disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Link BK,
                                                                                                                                                                VH chain mutant L48I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95US-0397411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96WO-US02754
                                                Location/Qualifiers 48
                                                                                                                                                                                                                                              protein;
                                                                                                                          variable chain; immunoglobulin G; medical therapy;
multiple sclerosis; antibody storage; VH; mutein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              65.9%; Score 404.5; DB 17; 64.5%; Pred. No. 6.5e-30; tive 15; Mismatches 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tso JY,
                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Weiner G;
                                                                                                                                                                                                                                                                                                                                                                           =
::
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                             115
                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۳.
```

```
QΥ
                                                                                                                                                                                                                                                                                              $\times \times \
                                                                                                                                                                                                                                                                                                                                                     This sequence is a mutant of the variable heavy (VH) chain of the cantibody TM27. TM27 is an immunoglobulin G (196) antibody, contained in the isotonic pharmaceutical formulation of the invention, along with a citrate buffer at a physiologically acceptable pH. The formulations are useful in medical therapy, especially for treatment of autoimmune cd isease, and particularly, therapy of multiple sclerosis (using the TM27 cantibody heavy or light chains). The formulation is useful for improving the storage of an antibody. The antibody formulations are simple and ceffective. The formulations are stable and have improved storage properties. The formulations require than prior art formulations. CC Existing antibody formulations require the use both of a stabiliser and a buffer. The present invention formulations are stabilized only by citrate cuffer in a saline solution at a physiologically preferable pH. The CC avoidance of low pH prevents undesirable reaction as the site of claretion. The formulation does not use ovalbumin for stabilisation, chance avoiding an allergic response to ovalbumin. Also the formulation comparison to the process and also requires the formulation to be resuspended prior to administration.
                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-MAR-1998;
22-JAN-1998;
                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           buffer, have improved storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Isotonic pharmaceutical antibody formulations comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999-458611/38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (ASTR ) ASTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                         ;08
                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page 20-21; 30pp; English.
                                                                                                                                                                                                                                                                                              120 AA;
                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98SE-0000766
98SE-0000170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-SE00049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                65.9%;
64.5%;
                                                                                         16;
                                                                                 Score 404.5; DB 20 Pred. No. 6.8e-30; 6; Mismatches 21;
                                                                                                                                                                  DB 20;
                                                                                         Indels
                                                                                                                                                                  Length 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a citrate
                                                                                     7;
                                                                                     Gaps
```

```
RESULT 10
AAW05827
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                               밁
                                          B-cell lymphoma; humanised antibody; bispecific antibody; myeloma; leukaemia; hybridoma; monoclonal antibody.
                   Chimeric Homo sapiens;
                                                                                 Humanised 1D10 antibody heavy chain.
                                                                                                          27-JAN-1997
                                                                                                                                AAW05827;
                                                                                                                                                        AAW05827 standard; Protein; 273
                                                                                                                                                                                                                 117 tvss 120
                                                                                                                                                                                                                                         118 TVSS 121
                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                      61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVP---YGLDYWSPGLLL 117
                                                                                                                                                                                                                                                                                                                        1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                             qvqlqesgpglvrpsqtlsltctvsgfsltaygvnwvrqppgrglewigmiwgdgntdyn
                                                                                                        (first entry)
                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                              60
```

<u>ب</u>

Mus sp

```
Ş
                                          В
                                                                ð
                                                                                         밁
                                                                                                                                                                                                   문
                                                                                                            Ş
                                                                                                                                        Query Match
Best Local Similarity
Matches 78; Conser
                                                                                                                                                                                                                                          The humanised 1D10 antibody heavy chain (AAW05827) includes a variable region (see also AAW05823) consisting of human R3.5HG heavy chain variable region framework and complementarity determining regions from the murine 1D10 antibody specific for a 28/32 kDa antigen found on the surface of malignant B-cells. It can be coexpressed with humanised 1D10 light chain (see also AAW05828) in mammalian host cells. Bispecific antibodies can be constructed that include a first binding fragment comprising humanised M291 heavy and light chain variable regions (see also AAW05826, AAW05830), and a sec binding fragment comprising humanised 1D10 heavy and light chain variable regions. Such antibodies are reactive with both T or NK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Region
                                                                                                                                                                                                                                                                                                                                                                                                                      New bispecific antibody reactive with both T or NK cells and malignant B cells - also their humanised forms and hybridomas producing them, useful for treating or preventing leukaemia,
                                                                                                                                                                                                                                                                                                                                                                                         Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1996-412742/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gingrich R, Link BK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-FEB-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-SEP-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Domain
                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                     variable regions.
cells and maligna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (IOWA-) IOWA IMMUNOTHERAPY INVESTIGATORS (PROT-) PROTEIN DESIGN LABS INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W09626964-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Region
                                                                                                                                                                                                                                                                                                                                                                                                              lymphoma and myeloma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Region
116 s 116
                     121
                                                                   61
                                             61
                                                                                      S 121
                                           aafisrltiskdtsknqvslklnsltaadtavyycarndr--
                                                                 TALOSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                                                                                                                                                                                                                                        28; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN DESIGN LABS INC
                                                                                                                                                                                                                                    malignant
                                                                                                                                                                                                  273
                                                                                                                                       65.9%; ilarity 64.5%; Conservative 15
                                                                                                                                                                                                                                                                                                                                                                                       4d; 85pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96WO-US02754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  340..446
/label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    117..214
/label - CH1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /label= CDR3
117..214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label - CDR2
98..105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label - CDR1
50..65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= Variable_domain 31..35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           215..234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /label = Fos_leucine_zipper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label Hinge
                                                                                                                                                                                                                                     Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     273
                                                                                                                                                                                                                                     cells,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tso
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CH3
                                                                                                                                                                                                                                                                                                                                                                                       English.
                                                                                                                                      ; Score 404.5; DB 17; Pred. No. 1.7e-29; 15; Mismatches 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JY,
                                                                                                                                                                                                                                   and have therapeutic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Weiner
                                                                                                                                                             DB 17;
                                                                                                                                                                                                                                    and
                                                                                                                                        Indels
                                                                                                                                                            Length 273;
                                                                                                                                                                                                                                    diagnostic
                                                                                                                                        Çī
                                                                                                                                                                                                                                                                    and a second
                                                                                                                                      Gaps
                                                                                         60
                                                                                                                60
                                                                                                                                        ļ,
```

Sequence

446

```
RESULT 1
                                                                                The humanised ID10 antibody heavy chain (AAW05829) includes a variable region (see also AAW05823) consisting of human R3.5HG heavy chain variable region framework and complementarity determining regions from the murine ID10 antibody specific for a 28/32 kDa antigen found on the surface of malignant B-cells. It can be coexpressed with humanised ID10 light chain (see also AAW05828) in mammalian host cells. Bispecific antibodies can be constructed that include a first binding fragment comprising humanised M291 heavy and light chain variable regions (see also AAW05826, AAW05830), and a second
                                                                                                                                                                                                                                                                                                                                                                                   New bispecific antibody reactive with both T or NK cells and malignant B cells - also their humanised forms and hybridomas producing them, useful for treating or preventing leukaemia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gingrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Humanised 1D10 antibody heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW05829 standard; Protein; 446
                                          binding fragment comprising humanised 1D10 heavy and light chain variable regions. Such antibodies are reactive with both T or NK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (IOWA-) IOWA IMMUNOTHERAPY INVESTIGATORS (PROT-) PROTEIN DESIGN LABS INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-SEP-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9626964-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW05829
appins.
                       cells and
                                                                                                                                                                                                                                                                                                                      Example 4; Fig 4e; 85pp; English
                                                                                                                                                                                                                                                                                                                                                                  lymphoma and myeloma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-FEB-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1996-412742/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lymphoma; hum
a; leukaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus
                  malignant B cells, and have therapeutic and diagnostic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Link BK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95US-0397411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96WO-US02754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label=
340..446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label= Variable_domain
31..35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label= CH1
215..229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117..214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                humanised
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /label- Hinge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= CDR3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /label= CDR2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /label- CDR1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      manised antibody; bispecific antibody;
hybridoma; monoclonal antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tso
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CH3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CH2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JY,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Weiner
                                                                                     and a second
```

```
RESULT 1
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
    This sequence is a mutant of the variable heavy (VH) chain of the cantibody TM27 TM27 is an immunoglobulin G (IgG) antibody, contained in the intention, along with a critrate buffer at a physiologically acceptable pH. The formulations are useful in medical therapy, especially for treatment of autoimnune clises, and particularly, therapy of multiple sclerosis (using the TM27 antibody heavy or light chains). The formulation is useful for improving the storage of an antibody. The antibody formulations are simple and effective. The formulations are stable and have improved storage properties. The formulations are stable and have improved storage buffer. The present invention formulations are stabilized only by citrate buffer. The present invention formulations are stabilized only by citrate buffer in a saline solution at a physiologically preferable pH. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Best I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                        09-MAR-1998;
22-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TM27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY22433 standard;
                                                                                                                                                                                                                 Isotonic
                                                                                                                                                                                                                                                                                                                                         15-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                29-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                      WO9937329-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-SEP-1999
injection.
                                                                                                                                                                                                                                                                                  (ASTR )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             neavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Match
                                                                                                                                                                                                                                      1999-458611/38
                                                                                                                                                                                                                                                                                                                                                                                                                                                        sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aafisrltiskdtsknqvslklnsltaadtavyycarndr----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qvqlqesgpglvkpsetlsltctvsgfsltnygvhwvrqspgkglewigvkwsggsteyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                   ASTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                     have
                                                                                                                                                                                                               pharmaceutical antibody
                                                                                                                                                                               Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                     improved storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ЧΥ
                                                                                                                                                                                25-26;
                                                                                                                                                                                                                                                                                                        98SE-0000766
98SE-0000170
                                                                                                                                                                                                                                                                                                                                         99WO-SE00049
                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers 92
                                                                                                                                                                                                                                                           ß
                                                                                                                                                                                                                                                                                                                                                                                                            /label= V92R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chain mutant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     multiple sclerosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65.9%;
does
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 404.5;
Pred. No. 3e-2
15; Mismatches
                                                                                                                                                                              English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       V92R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                formulations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          404.5; DB
No. 3e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immunoglobulin G; medical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antibody storage;
ovalbumin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23;
                                                                                                                                                                                                               comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -yamdywgqgtlvtvs
for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                               ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VΗ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       446;
                                                                                                                                                                                                                citrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mutein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                               citrate
```

```
RESULTANT AND ANY STATE ANY STATE AND ANY STATE AND ANY STATE ANY STATE ANY STATE AND 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                     Flink
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TM27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hence avoiding an allergic response to ovalbumin. Also the formulation does not require lyophilisation which is an expensive process and also requires the formulation to be resuspended prior to administration.
                                                                                                                                                                                                                                                                                                                                                                                    09-MAR-1998;
22-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo
                                                                                                                                                                Claim
                                                                                                                                                                                                                          Isotonic
                                                                                                                                                                                                                                                                                                                                             (ASTR )
                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9937329-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY22431;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY22431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IgG antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tvss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVP---YGLDYWSPGLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qvqlqesgpglvrpsqtlsltctvsgfsltaygvnwvrqppgrglewlgmiwgdgntdyn
                                                                                                                                                                                                                                                                  1999-458611/38
                                                                                                                                                                12;
                                                                                                                                                                                                                                                                                                       Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81;
                                                                                                                                                                                                     have improved storage
                                                                                                                                                                                                                                                                                                                                               ASTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                        pharmaceutical antibody formulations comprising a citrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                Page
                                                                                                                                                                                                                                                                                                       Petren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                               ΑВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TM27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VH chain mutant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                22-23;
                                                                                                                                                                                                                                                                                                                                                                                    98SE-0000766
98SE-0000170
                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-SE00049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers 78
                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= S79F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                multiple sclerosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          655
                                                                                                                                                              30pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F78V,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         400.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S79F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunoglobulin G; medical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antibody storage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .6e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۷Η;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mutein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
```

This sequence is a mutant of the variable heavy (VH) chain of the antibody TM27. TM27 is an immunoglobulin G (19G) antibody, contained the isotonic pharmaceutical formulation of the invention, along with citrate buffer at a physiologically acceptable pH. The formulations useful in medical therapy, especially for treatment of autoimmune disease, and particularly, therapy of multiple sclerosis (using the antibody heavy or light chains). The formulation is useful for impro

contained

with

are in

improving

the TM27

۲.

```
RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99999999999
 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the storage of an antibody. The antibody formulations are simple and effective. The formulations are stable and have improved storage properties. The formulation is simpler than prior art formulations. Existing antibody formulations require the use both of a stabiliser and buffer. The present invention formulations are stabilized only by citrat buffer in a saline solution at a physiologically preferable pH. The avoidance of low pH prevents undesirable reaction as the site of injection. The formulation does not use ovalbumin for stabilisation, hence avoiding an allergic response to ovalbumin. Also the formulation does not require lyophilisation which is an expensive process and also requires the formulation to be resuspended prior to administration.
Novel recombinant antibody specific cells (APC), genet
                                                                                         Recombinant conjugate antibody mol., modified for delivering an antigen - elicits enhanced immune response without the use of adjuvant to generate antibodies which are useful in vaccines or
                                                                                                                                                                                       Anand
                                                                                                                                                                                                                                             07-JUN-1995;
                                                                                                                                                                                                                                                                      07-JUN-1996;
                                                                                                                                                                                                                                                                                                 19-DEC-1996
                                                                                                                                                                                                                                                                                                                           WO9640941-A1
                                                                                                                                                                                                                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                 antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                     Murine anti-human class II monoclonal antibody 44H104 VH chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW22538 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                   Example 1; Fig 1B;
                                                                                                                                                                                                                                                                                                                                                                                                          Antibody; light chain; variable region; hybridoma cell line 44H104;
                                                                                                                                                                                                                 (CONN-) CONNAUGHT LAB LTD
                                                                             lmmuno:diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1997-077271/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVP---YGLDYWSPGLLL 117
                                                                                                                                                                                       NN,
                                                                                                                                                                                                                                                                                                                                                                                               response; enhance;
                                                                                                                                                AAT77852
                                                                                                                                                                                                                                                                                                                                                                                 delivery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                      Barber BH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
inant conjugate antibody molecules comprise a monoclonal
cific for a surface structure of antigen presenting
genetically modified to contain at least one antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                           95US-0483576
                                                                                                                                                                                                                                                                      96WO-CA00400
                                                  64pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64.1%; Score 393.5; DB 20 63.7%; Pred. No. 6.9e-29; tive 15; Mismatches 23;
                                                                                                                                                                                      Caterini JE,
                                                   English.
                                                                                                                                                                                                                                                                                                                                                                                               stimulate;
                                                                                                                                                                                      Cates GC,
                                                                                                                                                                                                                                                                                                                                                                                               vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20;
                                                                                                                                                                                                                                                                                                                                                                                             immunodiagnosis;
                                                                                                                                                                                       Klein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            citrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
```

```
AAR42797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A A C X A A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A C X A 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exclusively at one or more preselected sites. The conjugate is capable of delivering the antigen to APC and eliciting an immune response to the antigen. The new conjugates are useful as vaccines and are able to elicit an enhanced immune response without the use of an adjuvant. In a specific example, a conjugate was constructed using the murine anti-human class II monoclonal antibody secreted by hybridoma 44H104. The peptide CLTB36 was chosen as antigen; it consists of a tandemly linked T and B cell epitope derived from HIV MN strain. The present sequence represents the heavy chain variable region from 44H104 which was used in the preparation of a conjugate with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Кеу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                            Stott EJ,
                                                                                                                                               06-APR-1992;
                                                                                                                                                                                                 06-APR-1993;
                                                                                                                                                                                                                                             14-OCT-1993
                                                                                                                                                                                                                                                                                              WO9320210-A
                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                         Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bos taurus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        respiratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Monoclonal antibody; mAb; light; heavy; chain; variable; complementarity determining region; CDR; B4; B13/B14; RSV19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Partial B13/B14 Ab variable heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR42797;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR42797 standard; protein; 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     140 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 S 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   :|| ||||:::| ||| | :||: |:||:||:||:::
salmsrlsiskdnfksqvflkmsslqtddtamyycaray.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
75; Conserv
                                                                                             SCOTGEN LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLTB36.
                                            Taylor G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       140 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rity determining region; CDR; B4; syncytial virus; RSV; F protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                               92GB-0007479
                                                                                                                                                                                                 93WO-GB00725
                                                                                                                                                                                                                                                                                                                                                                       /note=
120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50..65
/label=
                                                                                                                                                                                                                                                                                                                                             /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /label
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    L CDR
                                                                                                                                                                                                                                                                                                                                                "residue not
                                                                                                                                                                                                                                                                                                                                                                                               "residue not defined in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 390.5; 1
Pred. No. 1.6e
17; Mismatches
                                                                                                                                                                                                                                                                                                                                                defined
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5; DB 18;
l.6e-28;
nes 28;
                                                                                                                                                                                                                                                                                                                                                in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -gdyvhyamdywgqgtsvtas
                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                  the specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
```

WPI; 1993-336917/42

```
В
                                                                                                                                                         Qy
                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                 Search completed: August 12, 2002, 09:25:38 Job time: 168 sec
                                                                          В
                                                                                              Š
                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 85
                                                                                                                                                                                                                                                                                                                                                                        Variable light chain and variable heavy chain sequences derived from bovine anti-RSV F protein monoclonal antibodies (mAbs) B4 and B13/B14 (AAR42794-R42797), and murine anti-RSV F protein mAb RSV19 (AAQ49376-Q49377), and their CDR peptides, may be used in the design of fusion proteins (including altered antibodies) which are characterised by the antigen binding specificity of these mAbs (for humanised Abs, see AAR42798-R42801 and AAR42805-R42808).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Fig 4; 139pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             prevention and diagnosis of infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New antibodies against respiratory syncytial virus - including humanised and chimaeric antibodies, useful for treatment,
                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                             NB: the specification is incomplete and published without claims.
                                                                                                        109
                                                                        120 xdawgqgllvtvss 133
                                                                                                                              -DYWSPGLLLTVSS 121
                                                                                                                                                                                                                                                      Similarity 63.4
85; Conservative
                                                                                                                                                                                                                                                                                                                                 141 AA;
                                                                                                                                                                                                                                                   63.5%; Score 390; DB 14; 63.4%; Pred. No. 1.7e-28; tive 10; Mismatches 25;
                                                                                                                                                                                                                                                                                Length 141;
                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                      14; Gaps
                                                                                                                                                                                                                                                      Ψ
```

```
Database :
                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Run on:
PIR_71:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                         August 12, 2002, 09:23:26; Search time 28.26 Seconds (without alignments) 377.421 Million cell updates/sec
                                                                                                                                                                                                                                                                          283138 seqs, 96089334 residues
                                                                                                                                                                                                                                                                                                                                                                                       US-09-786-015-4
564
                                                                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                      QDVLTQPSSVSGSLGQRVSI.....SYQSTYSGVFGSGTRLTVLG 111
                                                                                                                                                                                                                                          283138
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	ъ	4	ω	2	1	NO.	Result	
	369	369	369	369	370	371	371.5	372	373	373	373	373.5	374	375	375.5	376	376.5	377	378	379.5	381	381	382	385	385	387	387	391	399.5	Score		
	65.4	65.4	•		•	•	٠	•	•	•	•		•		•	•	•	•	67.0	•	٠	•	•	•		8	œ	9	70.8		Query	æ
:	216	111	111	110	111	130	149	111	235	111	109	112	111	130	236	136	112	216	233	235	129	111	111	111	111	235	111	111	129	Length I		
	N	N	۳	N	<u>ب</u>	ب	N	N	N	N	μ	N	N	N	2	N	Ŋ	N	N	N	N	1	H	N	N	N	N	Н	N	. BB	•	
	A42193	S36281	L2HUBO	S57442	L2HUTR	LIHUBL	S23626	S36274	S05270	\$46397	L2HUBR	S44105	\$47009	S78057	S25746	S16848	S51148	S29258	S25752	S25754	S78058	L2HUBH	L2HUMC	S46396	S38497	S14675	S19671	L2HUVL	A30554	ID		
	lambda	lambda	lambda	Ig lambda chain V-	Ig lambda chain V-	lambda chain	lambda	lambda chain	_	lambda chain	lambda chain	lambda chain	Ig lambda chain V1	lambda chain		lambda chain	tibody l	lambda chain		lambda chain	lambda	lambda chain	lambda	lambda	lambda	Ig lambda chain -	lambda	cha	lambda chain	Description		

lambd	lambda ch lambda	lambda la	RESULT 2 L2HUVL Ig lambda chain V-II region (Vil) - human (tentative sequence) C;Species: Homo sapiens (man) C;Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change C;Accession: A01977 R;Ponstingl, H.; Hilschmann, N. Hoppe-Seyler's Z. Physiol. Chem. 352, 859-877, 1971 A;Title: Rule of antibody structure. The primary structure of a A;Reference number: A01977; MUID:71215142 A;Accession: A01977 A;Molecule type: protein A;Residues: 1-111 <pon> C;Comment: This is a Bence Jones protein. C;Genetics: A;Gene: GDB:IGLV@ A;Cross-references: GDB:119342; OMIM:147240 A;Map position: 22q11.2-22q11.2 C;Complex: An immunoglobulin heterotetramer subunit consists of hain disulfide bonds. In some cases, such as IgA and IgM, the s</pon>	A30554 Ig lambda chain precursor V region - sheep (fragment) C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep) C;Date: 03-Mar-1989 #sequence_revision 03-Mar-1989 #text_change 21- C;Accession: A30554 R;Foley, R.C.; Beh, K.J. J: Immunol. 142, 708-711, 1989 A;Title: Isolation and sequence of sheep Ig H and L chain cDNA. A;Reference number: A30554; MUID:89093962 A;Accession: A30554 A;Status: preliminary; not compared with conceptual translation A;Accession: A30554 A;Residues: 1-129 <fold- <imm="" c;keywords:="" c;superfamily:="" domain:="" f;34-110="" heterotetramer;="" homology="" immunoglobulin="" region;="" v=""> Query Match Best Local Similarity 75.9%; pred. No. 7.1e-26; Matches 85; Conservative 8; Mismatches 16; Indels 3; Qy 1 QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRA Matches 85; Conservative 8; Mismatches 16; Indels 3; Qy 61 pDRFSGSRSGNTATLTISSLQAEDEADYYC-ASYOSTYSGVFGSGTRLTVLG 111 Db 79 PDRFSGSRSGNTASLTISSLQAEDEADYYCLAEHDSSYN-LFGSGTRLTVLG 111 Db 79 PDRFSGSRSGNTASLTISSLQAEDEADYYCLAEHDSSYN-LFGSGTRLTVLG 129</fold->	30 368 65.2 111 2 S36256 31 368 65.2 235 2 S25758 32 367.5 65.2 112 1 LZHUNG 33 367 65.1 111 2 S36263 34 367 65.1 111 2 S25759 35 366 64.9 111 1 LZHUNG 36 364.5 64.6 112 2 S31515 37 364 64.5 131 2 S34521 38 364 64.5 131 2 S24321 39 363 64.4 111 1 LZHUNG 40 362.5 64.3 213 2 S25750 41 362.5 64.3 213 2 S25066 41 362.5 64.3 213 2 JE0246 42 362 64.2 112 2 B44151 43 361 64.0 234 2 S25757 44 359 63.7 112 2 B44151 45 358 63.5 130 2 S09712
	oc lock SGV Van.	a chain a chai	ge ge	heep) e 21 1129; y y TITDRA	

```
R; Jones, P.T.
R; Jones, P.T.
submitted to the EMBL Data Library,
submitted to the EMBL Data Library,
submitted to the EMBL Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: heterotetramer F;15-92/Domain: immunoglobulin homology <IMM> F;22-90/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                   Ig lambda chain - human (Species: Homo sapiens (man) (Species: Homo sapiens (man) (Spate: 19-May-1994 #sequence_revision 19-May-1994 (Spates) (Spat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Homo sapiens (man)
C;Date: 22-Jan-1993 #sequence_revision
C;Accession: S19671; S25460
                                                                                                                                                                                                                submitted to the EMBL Data Library, A; Reference number: S14675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 1-39,'Q',41-65,'A',67-111 <JON>
A; Residues: 1-39,'Q',41-65,'A',67-111 <JON>
A; Cross-references: EMBL:X61643; NID:g37855; PIDN:CAA43824.1; PID:g1335383
C; Superfamily: immunoglobulin V region; immunoglobulin homology
C; Keywords: heterotetramer; immunoglobulin
F;15-92/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-111 <MAR>
A; Cross-references: EMB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: By-passing immunization. Human antibodies from V-gene libraries displayed on A;Reference number: S19663; MUID:92085276 A;Accession: S19671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Marks, J.D.; Hoogenboom, H.R.;
J. Mol. Biol. 222, 581-597, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
A;Cross-references: EMBL:X51754
R;Vasicek, T.J.; Leder, P.
J. Exp. Med. 172, 609-620, 1990
                                                                                                        A; Molecule type: DNA
A; Residues: 1-235 < VAS1>
                                                                                                                                                                               A; Reference number: A; Accession: S14675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Reference number: A; Accession: S25460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ig lambda chain V region (clone alpha-TEL13) -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ILTQPASVSGSPGQSITISCTGSSRDVGGYNYVSWYQHHPGKAPKLLISEVTNRPSGVSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FSGSKSANTASLTISGLQAEDEADYYCSSYTSSNSVVFGGGTKLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGIPDR 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RFSGSKSGNTASLTISGLQAEDEADYFCASYTSSKTYVFGRGTKLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LTQPASVSGSLGQSITISCTGTSSDVGGYNYVSWFQQHPGTAPKLIISEVRNRPSGVSDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL: X61643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   69.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68.6%;
67.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bonnert, T.P.; McCafferty, J.; Griffiths, A.D.; Winter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 391; DB 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   October
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-Jan-1993 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             387; DB 2;
No. 6.3e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18;
                                                                                                                                                                                                                                                                                                                                                          #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111
                                                                                                                                                                                                                                                                                                                                                                  21-Jan-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
C.Species: Homo sapiens (man)
C.Species: Homo sapiens (man)
C.Date: 27-Jan-1995 #sequence_revision 27-Jan-1995 #text_change
C.Accession: S46396
R.Figint, M.; Marks, J.D.; Winter, G.; Griffiths, A.D.
J. Mol. Biol. 239, 68-78, 1994
A.Title: In vitro assembly of repertoires of antibody chains on
A.Reference number: S46390; MUID:94254092
A.Accession: S46396
A.Status: preliminary
A.Molecule type: DNA
A.Residues: 1-111 <FIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:X51754
C;Genetics:
A;Introns: 16/1; 130/1
A;Introns: 16/1; 130/1
C;Superfamily: immunoglobulin V region; immunog C;Keywords: heterotetramer; immunoglobulin F;150-218/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: EMBL:Z23033; NID:g414041; PIDN:CAA80568.1; PID:g414042 C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: heterotetramer; immunoglobulin E;15-92/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C:Species: Homo sapiens (man)
C:Date: 06-Jan-1995 #sequence_revision
C:Accession: S38497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Title: Structure and expression of the human A; Reference number: $12440; MUID:90324881 A; Accession: $12445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-111 <MAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Marks, J.D.; Ouwehand, W.H.; Bye, J.M.; Finnern, R.; Gorick, B.D.; Yoak, D.; Thorpe submitted to the EMBL Data Library, June 1993
A;Description: Human antibody fragments specific for human blood group antigens from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
S38497
Ig lambda chain -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-129 < VAS2>
                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: S38488
A; Accession: S38497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                 Ig lambda chain V region – human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                      L
                                                                                                                                                                                                                                                                                                                                                                                                                                                              L
                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                          PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                   SHRFSGSKSGNTASLTISGLQAEDEADYYCYSYAGSYTFVFGTGTKLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                            QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QSALTQPPSASGSLGQSVTFSCSGTSSDIGNYNYVSWYRQHPGKAPKLMIYEVTKRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                      QSALTQPASVSGSPGQSITISCTGTSSDVGAYDHVSWYQQHPGKAPQLMIYAVTNRPSGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68.68;
65.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 385; DB Pred. No. 9.2e: 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 387; DB 2; Pred. No. 1.3e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-Jan-1995 #text_change 21-Jan-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immunoglobulin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
.2e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immunoglobulin lambda genes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130
                                                                                                          the
                                                                                                                                                                                           20-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                          surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                          of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                          phage
```

```
Immunochemistry 12, 643-652, 1975
A;Title: A new lambda-chain gene.
A;Ritle: A new lambda-chain gene.
A;Contents: Annotation; lambda chain genes
A;Contents: annotation; lambda chain genes
A;Contents: annotation; lambda chain genes
A;Note: the Mcg-type C region appears to be correlated with a very unusual V-region
B;Edmundson, A.B.; Ely, K.R.; Abola, E.E.; Schiffer, M.; Panagiotopoulos, N.
Biochemistry 14, 3953-3961, 1975
Biochemistry 14, 3953-3961, 1975
A;Title: Rotational allomerism and divergent evolution of domains in immunoglobulin
A;Reference number: A90391
A;Contents: annotation; X-ray crystallography, 2.3 angstroms
C;Comment: This is a Bence Jones protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Gene: GDB:IGLV@
A;Cross-references: GDB:119342; OMIM:147240
A;Map position: 22q11.2-22q11.2
C;Complex: An immunoglobulin heterotetramer subunit consists of two identical light (kap hain disulfide bonds. In some cases, such as IgA and IgM, the subunits associate into 12 C;Superfamily: immunoglobulin v region; immunoglobulin homology
C;Seywords: blocked amino end; heterotetramer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C:Species: Homo sapiens (man)
C:Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 24-Nov-1999
C:Accession: A90381; A01975
R:Fett, J.W.: Deutsch, H.F.
RESULT
L2HUBH
                                                                                                                                          Š
                                                                                                                                                                                             밁
                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                    F;15-92/Domain: immunoglobulin homology <IMM>F;1/Modified site: blocked amino end (Gln) (p: F;22-90/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biochemistry 13, 4102-4114, 1974
A;Title: Primary structure of the Mcg lambda
A;Reference number: A90381; MUID:75013804
A;Accession: A90381
A;Molecule type: protein
A;Residues: 1-111 <FET>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:Z31684; NID:g509793; PIDN:CAA83489.1; PID:g1335168 C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: heterotetramer; immunoglobulin C;Keywords: heterotetramer; immunoglobulin F;15-92/Domain: immunoglobulin homology <IMM>
                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R; Fett, J.W.; Deutsch, H.F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Note: the C region of this chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ig lambda chain V-II region (Mcg) -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                 Matches
                                                                                                 61
                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG 111
                                                                                                                                                                                               ۳
                         æ
                                                                                                                                                                                     QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                              PDRFSGSKSGNTASLTVSGLQAEDEADYYCSSYEGSDNFVFGTGTKVTVLG
                                                                                                                                            PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SNRFSGSKSGNTASLTISGLQAEDEADYYCSSWTSSSTYVFGTGTKVTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QSALTQPASVSGSPGQSITISCTGTSSDVGAYKYVSWYQQHPGKAPKLMISEVSDRPSGV 60
                                                                                                                                                                                                                                                                                         Similarity 63.170; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                              67.7%;
63.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22;
                                                                                                                                                                                                                                                                                         Score 382; DB 1;
Pred. No. 1.6e-24;
0; Mismatches 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 385; DB 2;
Pred. No. 9.2e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          has
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                      (probably pyrrolidone carboxylic acid) #stat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kern+ and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                       Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mcg+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                              111
                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sub
```

δÃ

QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60

Query Match Best Local Matches

. Similarity 75; Conser

Conservative

16;

67.6%; 67.0%;

Score 381; DB 2; Pred. No. 2.3e-24;

Length 129 Indels

2

Gaps

2

an

```
C; Spec...
C; Date: 24-Apr-...
C; Date: 20-R; A01972
C; Accession: A01972
R; Kohler, H.; Rudofsky, S.; K
J. Immunol. 114, 415-421, 197
J. The: The primary structu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               $78058
Ig lambda chain precursor V-J region (clone mAB 67VL) - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 19-Nov-1997 #sequence_revision 05-Dec-1997 #text_change 23-Jul-1999
C;Accession: $78058; $23723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GDB:119342; OMIM:147240
A;Map position: 22q11.2-22q11.2
C;Complex: An immunoglobulin heterotetramer subunit consists of two ident. hain disulfide bonds. In some cases, such as IgA and IgM, the subunits as: C;Superfamily: immunoglobulin V region: immunoglobulin homology C;Keywords: heterotetramer; immunoglobulin; pyroglutamic acid F;15-92/Domain: immunoglobulin homology <YMM>
F;1/Modified site: pyrrolidone carboxylic acid (Gln) #status experimental F;22-90/Disulfide bonds: #status predicted
F;1-18/Domain: signal sequence (fragment) #status predicted <SIG>F;19-129/Product: Ig lambda chain (fragment) #status predicted <MAT>F;33-109/Domain: immunoglobulin homology <IMM>
                                                                                          A;Molecule type: mRNA
A;Residues: 19-129 <HAW>
A;Residues: 19-129 <HAW>
C;Superfamily: immunoglobulin V region; immunoglobulin homology
                                                                                                                                                                                              A; Reference number: S23716; MUID: 92031262 A; Accession: S23723
                                                                                                                                                                                                                                              patient
                                                                                                                                                                                                                                                                  A; Title: Complete sequence
                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:X54446; NID:g37923; PIDN:CAA38313.1; PID:g930121 R;Harindranath, N.; Goldfarb, I.S.; Ikematsu, H.; Burastero, S.E.; Wilder Int. Immunol. 3, 865-875, 1991
                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 1-129 <HAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                       submitted to the EMBL Data A; Reference number: $78051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 1-111 <KOH>
A; Residues: 1-111 <KOH>
A; Note: the C region of this chain has the Oz+ mai
C; Comment: This chain was isolated from a myeloma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: The primary structure of a human A;Reference number: A01972; MUID:75115478 A;Accession: A01972
                                                                           C; Keywords: immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: S78058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Harindranath,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Gene: GDB: IGLV@
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g lambda chain V-II region (Boh) - human
;Species: Homo sapiens (man)
;Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 02-Sep-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1975
                                                                                                                                                                                                                                                                       of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kluskens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 381; DB 1
Pred. No. 2e-24;
                                                                                                                                                                                                                                                                    genes encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     has the Oz+ marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 August 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lambda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                    the V(H) and V(L) regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           II chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                    Wilder,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  identical light (
its associate into
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                       of.
                                                                                                                                                                                                                                                                                                                  R.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                         low-
                                                                                                                                                                                                                                                                                                                  Notk
```

```
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 22-Nov-1993 #sequence_revision 26-May-1995 #text_change 21-Jan-2000
C;Accession: S25754
R;Combriato, G; Klobeck, H.G.
Eur. J. Immunol. 21, 1513-1522, 1991
A;Title: V(lambda) and J(lambda)-C(lambda) gene segments of the human immunog
A;Reference number: S16439; MUID:91257162
A;Status: preliminary; translation not shown
A;Molecule type: mRNA
A;Cross-references: EMBL:X57819; NID:933737; PIDN:CAA40956.1; PID:g33738
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: heterotetramer; immunoglobulin homology
F;150-218/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                         C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 22-Nov-1993 #sequence_revision 26-May-1995 #text_change 21-Jan-2000
C;Accession: S25752
R;Combriato, G; Klobeck, H.G.
Eur. J: Immunol. 21, 1513-1522, 1991
A;Title: V(lambda) and J(lambda)-C(lambda) gene segments of the human immunoglob
A;Reference number: S16439; MUID:91257162
A;Reference number: S16439; MUID:91257162
A;Status: preliminary; translation not shown
A;Mcceule type: mRNA
A;Residues: 1-233 <COM>
A;Residues: 1-233 <COM>
A;Cross-references: Exmbl:X57817; NID:g33733; PIDN:CAA40954.1; PID:g33734
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: heterotetramer; immunoglobulin
F;148-216/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
S25754
Ig_lambda chain
                        밁
                                                    Ş
                                                                                     멍
                                                                                                                 γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
S25752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ig lambda chain -
                                                                                                                                                  Query Match
Best Local S
Matches 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                        77
                                                      61
                                                                                     18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG-VFGSGTRLTVLG
|||||||||:||:||:||||
PDRFSGSKSGTSASLAISGLQSEDEADYYCAAWDDSLNGVVFGGGTKLTVLG
                                                                                  QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human (fragment)
                                                                                                                                                               67.0%;
66.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67.3%;
65.5%;
                                                                                                                                                    16;
                                                                                                                                                Score 378; DB 2
Pred. No. 7e-24;
6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 379.5;
Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5; DB 2;
5.3e-24;
nes 19;
                                                                                                                                                                                DB 2;
                                                                                                                                                    20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #text_change 21-Jan-2000
                                                                                                                                                                              Length 233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111
                     128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         129
                                                                                                                                                  2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                        immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    77
                                                                                                                                                  2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lan
                                                                                                                                                                                                                                                                                                                                                                        lan
S16848

Ig lambda chain V-II region precursor -
C:Species: Homo sapiens (man)
C:Date: 20-Feb-1995 #sequence_revision 2
C:Accession: S60297; S16848
                                                                                                                                 밁
                                                                                                                                                            Q
                                                                                                                                                                                              밁
                                                                                                                                                                                                                         ν
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Species:
                                                                                                                                                                                                                                                             Matches
                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
```

G

20-Feb-1995

#text_change

human

```
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-216 <CHOO
A:Note: only part of the coding sequence is
C:Superfamily: immunoglobulin V region; immu
C:Keywords: pyroglutamic acid
F:131-199/Domain: immunoglobulin homology <I
F:1/Modified site: pyrrolidone carboxylic ac
                                                                                                                                                                                                                                                                                                                                          C.Accession: S51148
R.de Kruif, J.; Boel, E.; Logtenberg, T.
submitted to the EMBL Data Library, January 1995
A;Description: Selection and application of human
A;Reference number: S51147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Homo sapiens (man)
C;Species: 19-Mar-1997 #sequence_revision 25-Apr-1997 #text_change 21-Jan-2000
C;Accession: S29258
R;Chouchane, L.; van Spronsen, A.; Breyer, J.; Guglielmi, P.; Strosberg, A.!
Eur. J. Biochem. 207, 1115-1121, 1992
                                                                                                                                                                                                                            A;Cross-references: EMBL:X83713
C;Superfamily: immunoglobulin V region;
F;13-90/Domain: immunoglobulin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                       antibody light chain V region - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 07-May-1995 #sequence_revision 01-Sep-1995
                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-112 < DEK>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: Molecular characterization of a human A;Reference number: S29257; MUID:92362614
                                                                                                                                                                                                                                                                                                                  A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                  A; Accession: S51148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Accession: S29258
                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lambda chain V region -
                                  64 FSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG-VFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FSGSKSGTSASLAITGLQAEDEADYYCQSYDSSLSGSAFGGGTKLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PDRFSGSKSGTSASLAITGLQAEDEGDYYCQTYDISLTVVFGGGTKLTVLG
                                                                                                                                                          Similarity
                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                          66.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16;
                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 377; DB
Pred. No. 7.8e
16; Mismatches
                                                                                                                                                          Score 376.5; DB 2
Pred. No. 4.6e-24;
                                                                                                                                         Mismatches
                                                                                                                                                                                                                             immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2; I
7.8e-24;
hes 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Gln) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     anti-Rh(D)
                                                                                                                                                                                                                                                                                                                                                                       SCFV
                                                                                                                                         19;
                                                                                                                                                                        ຸນ
                                                                                                                                                                                                                                                                                                                                                                                                                                           #text_change 21-Jan-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 216
                                                                                                                                                                                                                                              homology
                                                                                                                                                                                                                                                                                                                                                                     antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antibody with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Strosberg, A.D
                                                                                                                                                                                                                                                                                                                                                                       fragments
                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a D(H)
                                                                                                                                                                                                                                                                                                                                                                         from
                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                       ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     segmen
```

```
Ig lambda chain - human

(Species: Homo sapiens (man)

(C; Species: Homo sapiens)

C; Accession: $25746

R; Combriato, G.; Klobeck, H.G.

Rur. J. Immunol. 21, 1513-1522, 1991

Rur. J. Immunol. 21, 1513-1522, 1991

RyTitle: V(lambda) and J(lambda)-C(lambda) gene segments of the human immunoglobulin lam

R; Reference number: $16439; MUID:91257162

A; Accession: $25746

A; Status: preliminary; translation not shown

A; Molecule type: mRNA

A; Residues: 1-236 <COM>

RY Accession: $25746

A; Residues: 1-236 <COM>

RY Accession: $25746

RY Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:X62125; NID:g38334; PIDN:CAA44056.1; PID:g38335
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: heterotetramer; immunoglobulin
F;34-111/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Immunol. Lett. 34, 57-62, 1992
A;Title: Immunoglobulin heavy and light chain gene sequences of a human CD5 positive imm A;Reference number: S60295; MUID:93122853
A;Accession: S60297
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-136 <KU2>
Search completed: August 12, 2002, 09:23:27 Job time: 37 sec
                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:X57811; NID:g33721; PIDN:CAA40948.1; PID:g33722 C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: heterotetramer; immunoglobulin F;151-219/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
S25746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Kueppers, R.; Fischer, U.; Rajewsky, K.; Gause, Immunol. Lett. 34, 57-62, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 69; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 / Match 66.6%;
Local Similarity 64.3%;
nes 72; Conservative 19
                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 375.5; DB 2;
Pred. No. 1.1e-23;
9; Mismatches 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 376; DB 2; Length 136; Pred. No. 6e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 236;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

THIS PAGE BLANK (USPTO)

4,1

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               105224 seqs, 38719550 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         August 12, 2002, 09:23:49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QDVLTQPSSVSGSLGQRVSI.....
                             LV2F_HUMAN
LV2F_HUMAN
LV2C_HUMAN
LV2C_HUMAN
LV2E_HUMAN
LV2D_HUMAN
LV2D_HUMAN
LV2B_HUMAN
LV2I_HUMAN
LV1B_HUMAN
LV1C_HUMAN
LV1C_HUMAN
LV4B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search time 15.82 Seconds (without alignments) 271.673 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .SYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105224
                               P01713
P01710
P01710
P01710
P01710
P01712
P01702
P01702
P01705
P01704
P01704
P01701
P01703
P01703
P01703
P01703
P01703
P01703
P01703
P01703
P01713
P01713
P01715
P01717
P06318
P0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                                                                                                                           homo
homo
                                                                                sapien
         sapien
sapien
sapien
                                                                                sapien
sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULY I LV2H_H AC P01711 DT 1-JUL DT 21-JUL D
       RESULT 2
LV2F_HUMAN
ID LY2F_H
AC P01709
DT 21-JUL
DT 21-JUL
DT 15-JUL
DT 15-JUL
DT 15-JUL
OF 19 lam
OS Homo s
OC Eukary
                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35
35
35
35
35
35
35
44
44
44
45
LV2F_HUMAN STANDARD; PRT; 111 AA. P01709; P01709; 21-JUL-1986 (Rel. 01, Created) 21-JUL-1986 (Rel. 01, Last sequence update) 15-JUL-1999 (Rel. 38, Last annotation update) 15-JUL-1999 (Rel. 38, Last annotation update) 1g lambda chain vII region MGC. Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; 1g; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region; Bence-Jones protein.
DISULPID 22 90
BY SIMILARITY.
NON_TER 11 11
SEQUENCE 111 AA; 11445 MW; 3913736B3EF367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=71215142; PubMed=5087637;
Ponsting1 H., Hilschmann N.;
Ponsting1 H. Hilschmann N.;
"Structural rule of antibodies. Complete primary structure of "Structural Immunoglobin L chain of the lambda type, subgroup I (Bence Jones protein VIL).";
Hoppe-Seyler's Z. Physiol. Chem. 352:859-877(1971).
-!- MISCELLANEOUS: THIS IS A BENCE-JONES PROTEIN.
PIR; A01977; L2HUYL.
HSSP; P01709; 2MCG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TV2H_HUMAN STANDARD; PRT; 111 AA
P01711;
P01711;
21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
15 lambda chain V-II region VIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                           4 LTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGIPDR 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             272.5
270
269.5
267.5
264.5
264.5
264
264
260
261.5
260
259
                                                                                                                                                                                                                                                                                         LTQPASVSGSLGQSITISCTGTSSDVGGYNYVSWFQQHPGTAPKLIISEVRNRPSGVSDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.3
47.9
47.4
47.1
46.9
46.8
46.8
46.5
5.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             114
111
113
108
108
129
109
129
1129
1129
1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69.3%;
67.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Score 391; DB; Pred. No. 6.6e-
19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KV10_HUMAN
KV3E_HUMAN
KV3E_HUMAN
KV4A_MOUSE
KV1T_HUMAN
LV6B_HUMAN
KV3D_HUMAN
KV4B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KV4A_HUMAN
LV7A_HUMAN
LV1_CHICK
KV1M_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3913736B3EF367E0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         111 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P01625
P01720
P04210
P01607
P01607
P01623
P01623
P01680
P01612
P01612
P01722
P01722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        homo sapien
homo sapien
gallus gall
homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        I a
```

Result No.

Score

Match

Length

Query

307.5 306.5 306.5 306 299 299 294 292 291

391 382 381 373 373 370 370 367.5 367.5 367.5 347.5 347.5 347.5 347.5 347.5 347.5 347.5

Gaps

0

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Total number

DB DB

seq of.

length:

2000000000

Database

SwissProt_40:*

Title: Perfect score:

US-09-786-015-4 564 1 QDVLTQPSSVSGSL

Scoring table: Sequence:

Gapop 10.0 , BLOSUM62

Gapext 0.5

Run Š

on ::

protein -

protein search, using

S S model

```
Query Match
Best Local
                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                               Immunoglobulin
MOD_RES 1
DISULFID 22
                                                                                                                                                                                                                                                                                                                           STRAND
STRAND
TURN
STRAND
TURN
                                                                                                                                                      STRAND
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J. Mol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Edmundson A.B., Ely K.R., Abola E.E., Schiffer M., Panagiotopoulos N.;
"Rotational allomerism and divergent evolution of immunoglobulin light chains.";
Biochemistry 14:3953-3961(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
[1]
                                                                                                                                                                                                                           STRAND
HELIX
                                                                                                                                                                                                                                                                       TURN
                                                                                                                                                                                                                                                                                    TURN
STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=90133913; PubMed=2515285;
Ely K.R., Herron J.N., Harker M.,
"Three-dimensional structure of a
water Conformational flexibility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fett J.W., Deutsch H.F.;
"Primary structure of the Mcg la
Biochemistry 13:4102-4114(1974).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00047; ig;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X-RAY CRYSTALLOGRAPHY (2.3 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LAMBDA CHAIN GENES.
MEDLINE=76093781; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=75013804;
                                                                                                                                                                                                STRAND
                                                                                                                                                                                                                STRAND
                                                                                                                                                                                                                                                        STRAND
                                                                                                                                                                                                                                                                                                             STRAND
                                                                                                                                                                                                                                                                                                                                                                                                  STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          forms.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X-RAY CRYSTALLOGRAPHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "A new lambda-chain gene.";
Immunochemistry 12:643-652(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
61
                            \vdash
                                                     Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOL. Biol. 210:601-615(1989).

MISCELLANEOUS: THIS IS A BENCE-JONES PROTEIN.

MISCELLANEOUS: THE MCG-TYPE C REGION APPEARS TO BE CORRELATED WITH A VERY UNUSUAL V-REGION SUBSTITUTION, 103-THR ABOVE FOR GLY,

SUGGESTING THAT THE V-C JOINING MECHANISM IS NOT ALWAYS RANDOM.

MISCELLANEOUS: THE C REGION OF THIS CHAIN HAS THE KERN+ AND MCG+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MARKERS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J.W.,
                                          QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                       QSALTQPPSASGSLGQSVTISCTGTSSDVGGYNYVSWYQQHAGKAPKVIIYEVNKRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                           Conserve 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; 15-JUL-92.
IPR003006; Ig_MHC.
IPR003596; Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     093781; PubMed-812801;
Deutsch H.F.;
                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=4415202;
                                                                                                                                                                                                90
12
12
23
23
32
40
43
54
55
63
63
63
63
77
77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Primates; Catarrhini;
                                                                                                                                                        11558 MW;
                                                                                              67.7%;
63.1%;
                                                                                                                                                                                                                                                                                                                                                                                                            Bence-Jones protein; 3D-structure.
PYRROLIDONE CARBOXYLIC ACID.
BY SIMILARITY.
                                                                                 20;
                                                                            Score 382; DB
Pred. No. 5.1e
20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lambda
                                                                                                                                                      7CC1D6E2FA3377BA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Edmundson A.B.;
light chain dimer
of a molecule in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chain.";
                                                                                              .1e-31;
                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hominidae;
                                                                                                            Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       domains
                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      crystallized
wo crystal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                 0;
                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in
                                                     60
                                                                                 0,
```

7

P P Qy

```
DЪ
                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                           RESULT 4
LV2E_HUMAN
                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LV2C_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                          Interrio,
Pfam; PF00047; ig; 1.
SMART; SW00406; IGv; 1.
Immunoglobulin V region.
                                                                                                                                              21-JUL-1986
21-JUL-1986
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                          MOD_RES
DISULFID
NON_TER
                        "Primary structure of a human IgAl im
sequence of a human IgA lambda light
J. Biol. Chem. 254.9006-9016(1979).
-!- MISCELLANEOUS: THE C REGION OF TH
                                                                                                          Eukaryota; Metazoa;
Mammalia; Euthería;
                                                                                                                                                                         LV2E_HUMAN P01708;
                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The primary structure of a human lambda
J. Immunol. 114:415-421(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-JUL-1986 (Rel. 01, Last sequence up 15-JUL-1999 (Rel. 38, Last annotation Ig lambda chain V-II region BOH. Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-JUL-1986
                                                             MEDLINE=80006606; PubMed=113407; Infante A.J., Putnam F.W.;
                                                                                SEQUENCE
                                                                                                 NCBI_TaxID=9606;
                                                                                                                             Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP; P01709;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=75115478; PubMed=804002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR003596; Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                19
                                                                                                                                   -JUL-1986 (Rel. 01, Create

-JUL-1986 (Rel. 01, Last s

-JUL-1999 (Rel. 38, Last a

lambda chain V-II region
                                                                                                                                                                                                                                                                   ب
                                                                                                                                                                                                                                                                                   <u>بــ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                  MISCELLANEOUS:
        MISCELLANEOUS:
               MARKERS
                                                                                                                                                                                                                                                                                                                                                                                                                                         А01972; L2HUBH.
                                                                                                                                                                                                                             QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PDRFSGSKSGNTASLTVSGLQAEDEADYYCSSYEGSDNFVFGTGTKVTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HUMAN
                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                        IPR003006;
                                                                                                                                                                                                                                                                                                                                                 1
22
111
111 AA;
                                                                                                                                                                                                                                                                                                     Conservative
L2HUBR
                                                                                                                                                                                                                                                                                                                                                                                                                                  2MCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   THIS
        THIS
                                                                                                          Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                    90
                                                                                                                                                                                                                                                                                                                                                  11650
                                                                                                                                                                                                                                                                                                             67.68;
                                                                                                                                                                                                                                                                                                                                                                                                                        Ig_MHC.
                                                                                                                                             Last sequence u
                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
        CHAIN
                                                                                                                                                                                                                                                                                                                                                  ₩.
                                                                                                                                     BUR.
                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                  PYRROLIDONE CARBOXYLIC ACID. BY SIMILARITY.
        WAS
                                                                                                          Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    WAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                  94520309932623E8 CRC64;
                                                                                                                                                                                                                                                                                                     Mismatches
       ISOLATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ISOLATED
                                            immunoglobulin.
                                                                                                                                                                                                                                                                                                              381;
No. 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   THIS CHAIN HAS THE OZ+ ISOLATED FROM A MYELOMA
                         THIS CHAIN HAS
                                                                                                                                            on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
on update)
                                            chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111
                                                                                                                                                                                  109
                                                                                                                                                                                                                                                                                                              .4e-31;
                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              II chain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ą
                                                                                                                                                                                 AA
        FROM
                                            (Bur).
        A MYELOMA
                                                                                                                                                                                                                                                                                                                     Length 111;
                          THE
                                                                                                                                                                                                                                                                                                     Indels
                                                     ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                          KERN+
                                                     Amino
                                                                                                                                                                                                                                                111
                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROTEIN.
                                                    acid
                          AND
                                                                                                                                                                                                                                                                                                     0
                          MCG+
                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                     0;
```

Tue

```
RESULT
LV1G_H
 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DR DR DR DR FT FT FT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam: PF00047; 19; 1.
SMART: SM00406; IGv; 1.
Immunoglobulin V region.
MOD_RES
DISULFID 22 90
SITE 91 91
                                                                                                                                                                                                                                                                                                                                                                                                               LV1G_HUMAN STAN
P06316;
01-JAN-1988 (Rel. (
01-JAN-1988 (Rel. (
15-JUL-1999 (Rel. )
 NON_TER
                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no we use by non-profit institutions as long as its content.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HSSP; P01709;
InterPro; IPRO
InterPro; IPRO
                                                                   Immunoglobulin SIGNAL
                                                                                        InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; 1g; 1.
SMART; SM00406; IGv; 1.
                                                                                                                                      EMBL; X01147; CAA25598.1; -. PIR; A01966; L1HUBL. HSSP; P01703; 7FAB.
                                                                                                                                                                                 use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                       DISULFID
                                   DOMAIN
                                             DOMAIN
                                                          CHAIN
                                                                                                                                                                                                                                                                           Nucleic Acids Res. 12:8407-8414(1984).
                                                                                                                                                                                                                                                                                       sequence.
                                                                                                                                                                                                                                                                                                            Tsujimoto Y.,
                                                                                                                                                                                                                                                                                                                       MEDLINE=85062823; PubMed=6095199;
                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                  Molecular cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                   lambda chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QSALTQPRSVSGSPGHSVTISCIGTSSNVGDYKYVSWYQQHPGKAPKLIIYEVSSRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 Similarity
72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       709; 2MCG.
IPR003006; Ig_MHC.
IPR003596; Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                109
109
130 /
                                 1
20
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                  N.A
                     n V region; :
1 19
20 130
20 115
20 115
16 130
16 130
                                                                                                                                                                                                                                                                                                              Croce
 ۶
ج
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                  1. 06, Created)
1. 06, Last sequence update)
1. 38, Last annotation update)
V-I region BL2 precursor.
                                                                                                                                                                                                                                                                                        e C.M.;
of a human immunoglobulin lambda chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109
11506
 13564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66.1%;
                                                                             Signal.
 Œ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14;
                      IG LAMBDA CHAIN V SEGMENT.
J SEGMENT.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 3.80
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PYRROLIDONE CARBOXYLIC ACID.
BY SIMILARITY.
APPEARS TO BE A FREE BUT UNREACTIVE
SULFHYDRYL GROUP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
 FA44BB17D3A55EBF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BFD8AE1C5D267FAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        973;
No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
.8e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₹
                                                          ٧-<u>١</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23;
 CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                          REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                  variable
                                                                                                                                                                                                                                           a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ν,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲.
```

Query Match

65.8%;

Score 371;

DB

1;

Length 130;

```
RESULT 7
LV2G_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
LV2D_HUMAN
  RRN OCC OCC DIT DIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A PART OF THE PROPERTY OF THE 
                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 67.0 Matches 75; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-JUL-1986
21-JUL-1986
15-JUL-1999
                                                                                                                                                                                                             LV2G_HUMAN
P01710;
SEQUENCE
                                                           Homo sapiens (Human).
Eukaryota; Metazoa; C
Mammalia; Eutheria; F
                                                                                                                     21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence up
15-JUL-1999 (Rel. 38, Last annotation
15 lambda chain V-II region BO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; ig; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Rule of antibody structure. Primary structure of a l 19A1-immunoglobulin (myeloma protein Tro). VI. Amino the L-chain, lambda-type, subgroup II.";
Hoppe-Seyler's Z. Physiol. Chem. 360:1903-1918(1979).
-- MISCELLANEOUS. THIS CHAIN WAS ISOLATED FROM A MYE PIR; A01973; L2HOTR.
HSSP; P01709; 2MCG.
                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LV2D_HUMAN P01707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence up
15-JUL-1999 (Rel. 38, Last annotation
15 lambda chain V-II region TRO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=80114123; PubMed=118915; Scholz R., Yang C., Hilschmann N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                                                                                                                                              ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ட
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                         PDRLSGSKSGDTASLTISGLRADDEADYYCCSYAGRYSVIFGGGTKLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1
22
111
111 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90
111
11561
                                                              Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67.0%; Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 370; DB 1;
Pred. No. 7.7e-30;
6; Mismatches 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PYRROLIDONE CARBOXYLIC BY SIMILARITY.
                                                           Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99DC457A12E8F6E1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NO.
                                                                                                                                                                   update)
                                                                                                                                                                                                                                 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111
                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7.3e-30;
ches 21;
                                                                               Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                              Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of a human monoclonal Amino acid sequence o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MYELOMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACID
                                                                                                                                                                                                                                                                                                                                                                                    111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          o
E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
```

δÃ

61

111

```
ğ
                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR; AULICIA, Aulicia
                                                                                   Query Match
Best Local S
Matches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=71103825; PubMed=5532228; Wikler M., Putnam F.W.; Putnam F.W.; Putnam acid sequence of human lambda chains. 3. Treprocessing the chymotryptic peptides, and sequence of protein Bo. J. Biol. Chem. 245:4488-4507(1970).

1. MISCELLANEOUS: THIS IS A BENCE-JONES PROTEIN.
                                                                                                                                                                                                                                   InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; ig; 1.
SMARR; SM00406; IGv; 1.
Immunoglobulin V region; Amyloid; Bence-Jones protein.
DISULFID 22 90 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  myeloma-associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tonoike H., Kametani F., Hoshi A., Shinoda T., "Amino acid sequence of an amyloidogenic Bence myeloma-associated systemic amyloidosis."; FEBS Lett. 185:139-141(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-MAR-1987 (Rel. 04, Created)
20-MAR-1987 (Rel. 04, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
19 lambda chain V-II region NIG-84.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LV2K_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=85204383; PubMed=3922791;
                                                                                                                                                                                                                                                                                                                                                                           issp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \vdash
  H
                                        \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ب
                                                                                                                                                                                                                                                                                                                                                                                                                                        MISCELLANEOUS: THIS IS A BENCE-JONES PROTEIN ISOLATED FROM
                                                                                                                                                                                                                                                                                                                                                                                                                 INDIVIDUAL WITH MYELOMA-ASSOCIATED SYSTEMIC AMYLOIDOSIS
                                                                                                                                                                                                                                                                                                                                                                        A01971; L2HUNG.
; P01709; 2MCG.
QSALTQPASVSGSPGQSITISCTGTTSDVGGYDFVSWYQQHPGKAPKLLIYDVNSRPSGI
                    QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PDRFSGSKSDNTASLTVSGLRAEDEADYYCSSYVDNNNFVFGGGTKLTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QSALTQPPSASGSPGQSVTISCTGTSSDVGDNKYVSWYQQHPGRAPKLVIFEVSQRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QDVLTQPSSYSGSLGQRYSITCSGSSSNIGGNAYYGWYQQYPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVL
                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111
111 AA;
                                                                                                                                                                                               112 AA;
                                                                                                                                                                                                                    22
112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                               11581 MW;
                                                                                                       65.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65.48;
62.78;
                                                                                   19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17;
                                                                                                       Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                             988FEF363AE1E4F3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92F5A1BF72421BAC
                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             369;
                                                                                                       No. 1.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              112
                                                                                   .4e-29;
nes 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .6e-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                            1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Isobe
Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . Tryptic Bo.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 111
                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptides
                                                                                                                              112;
                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99
  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                   1:
```

```
RESULT 10
LV1D_HUMAN
ID LV1D_HUMAN
AC P01702;
AC P01702;
DT 21_JUL-1986
DT 21_JUL-1999
DE If lambda c.
OS Homo sapien
OC Eukaryota;
OC Mammalia; E
OX NCBI_TaxID=
RN [1]
RA KAMEDAINE-83
RA Shimizu A.;
RT "Comparativ
RT immungqlobu
DR HSR; A0196;
DR HSSP; P0176
DR InterPro; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A FITTER A PROPERTY OF THE PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 70
                                                                                                                                                                                                                                                                                                                                                 P01702;
21-JUL-1986 (Rel. 01, Last so
21-JUL-1986 (Rel. 01, Last so
15-JUL-1999 (Rel. 38, Last an
Ig lambda chain V-I region N.
Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00047; 1g; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region; Be
MOD_RES 1
DISULFID 22 90
NON_TER 111 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LV2I_HUMAN STANDARD; PRT; 1

P01712;

21-JUL-1986 (Rel. 01, Created)

21-JUL-1986 (Rel. 01, Last sequence up

15-JUL-1999 (Rel. 38, Last annotation

19 lambda chain V-II region WIN.
                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

NCBI_TaxID=9606;
                              immunoglobulins. IV. Assignment
J. Biochem. 93:421-429(1983).
PIR; A01965; L1MUNG.
HSSP; P01703; 7FAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biochim. Biophys. Acta 537:9-21(1978)
                                                                                                                                                                            MEDLINE=83186114; PubMed=6404900;
Kametani F., Takayasu T., Suzuki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; ig; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chen B.L., Chiu Y.-Y.H., Humphrey R.L., Po
"Amino acid sequence of the human myeloma
                                                                                                      "Comparative studies on the structure of the light chains immunoglobulins. IV. Assignment of a subsubgroup.";
                                                                                                                                                          Shimizu A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    issp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=79062503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \mathbf{L}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A01978; L2HUWN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QSALTQPPRVSGSPGQSVTISCTGSYSNVTGYNHVSWYQQDPGKVPKLMIYDVDKRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PDRESGSKSANTASLTISGLQANNEADYYCSSYGGTYSLIFGGGTKLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PDRESGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
       703; 7FAB.
IPR003006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
22
111
111 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=102365;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        01, Created)
                                                                                                                                                                                                                                                                                                     Chordata; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bence-Jones protein.
PYRROLIDONE CARBOXYLIC
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MW;
                                                                                                                                                                                                                                                                                                                                                                               t sequence up
t annotation
n NIG-64.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 366; DB 1; 1
Pred. No. 1.9e-29;
"'Amatches 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BENCE-JONES PROTEIN
                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8C3CE95FE721B87C CRC64;
                                                                                                                                                                              s.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               111
                                                                                                                                                                              Shinoda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Poljak R.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                lambda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 111;
                                                                                                                                                                            Okuyama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Win.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
```

0,

```
RESULT 11
LV1H_HUMAN
                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
  밁
                                  Š
                                                                                                                     Ş
                                                                                                                                                                                                                                                                         SQUETTER REPORT OF THE PROPERTY OF THE PROPERT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DR DR FTT FTT SQ
                                                                                                                                                               Query Match
Best Local s
Matches 69
                                                                                                                                                                                                                                                                                      PIR; ALJOIR PIRO STAB.
HSSP; P01703; 7FAB.
InterPro; IPR003006; Ig_v.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; Ig; 1.
R SMART; SM00406; IGv; 1.
PRES 1.
Immunoglobulin V region; Monoclonal antibody.
Immunoglobulin V region; Monoclonal CARBOX PERS 1.
PYRROLIDONE CARBOX 90
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                       DISULFID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mihaesco E., Roy J.P., Congy N., Peran-Rivat L., "The amino acid sequence of a lambda light chain physicochemical and antigenic features."; Eur. J. Biochem. 150:349-357(1985).
-I- MISCELLANEOUS: RESIDUES 33-36 AND SOME OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JAN-1988 (Rel.
01-JAN-1988 (Rel.
15-JUL-1999 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMART; SM00406; IGv; 1.
Immunoglobulin V region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-85257662;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ното
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P06887;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LV1H_HUMAN
  61
                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ,,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lambda chain V-I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WERE POSITIONED BY HOMOLOGY.
MISCELLANEOUS: THE C REGION OF THIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MARKERS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                      QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYS-GVFGSGTRLTVLG
                     PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG-VFGSGTRLTVL 110
                                                                                QSVLTQPPSASGTPGGRVTISCSGSSSNVGSNZPAYWYQQLPGTAPKLLIYNYNQRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PDRFSGSKSGTSATLGITGLQTGDEADYYCGTWDSSLSVGMFGGGTRVTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QSVLTQPPSVSAAPGQEVTISCSGSSSNIGDN-FVSWYQQLPGTAPKLLIYDNNKRPSGI
PDRFSASRSGTSASLAISGLQSEDEADYYCAAWDDSLDGYVFGTGTKVTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pro; IPR003596; Ig_v.
PF00047; 1g; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
73; Conser
                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                              22
112
112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
111
111 AA;
                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                         ĀĀ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          06, Creat
06, Last
38, Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=2410269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1
89
111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      region MEM.
                                                                                                                                                                                                                                                                         11789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1-1454 MW;
                                                                                                                                                                                  62.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence
                                                                                                                                                                                                                                                                         MW.
                                                                                                                                                                   17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            annotation
                                                                                                                                                                 Score 354.5; |
Pred. No. 2.6e
|7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 363; DB Pred. No. 3.7e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PYRROLIDONE CARBOXYLIC BY SIMILARITY.
                                                                                                                                                                                                                                                                       748124F079CFFBE4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A21C6121C18A61E0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      363; DB 1;
No. 3.7e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                 .6e-28;
les 24;
                                                                                                                                                                                                                                                                                                                                    CARBOXYLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ą
                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THE
                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mihaesco C.
presenting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                      Length 112;
                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCED
                                                                                                                                                                                                                                                                                                                                    ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MCG+
111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AND KERN
                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEPTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             abnormal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ν,
                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59
                                                                                                                                                                 ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ?
```

RESULT

```
LV1B_HUMAN
ID LV1B_H
AC P01700
DT 21-JUL
DT 15-JUL
DT 15-JUL
DE IG lam
OS HOMOS
OC Eukary
OC Mammal
OX NCBI_T
RN [1]
RP SEQUEN
RX MEDLIN
RX MARDIN
RX MARDIN
DR SAMART;
DR InterE
DR InterE
DR InterE
DR InterE
DR INTERE
ET NON_TE
ET NON_TE
SQ SEQUE
   Š
                                                                                                                                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                             RESULT 13
LV2B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
DISULFID NON_TER
                                                                                                                                                                                                                                                 21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence up
15-JUL-1999 (Rel. 38, Last annotation
Ig lambda chain V-II region NEI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-JUL-1986 (Rel.
21-JUL-1986 (Rel.
15-JUL-1999 (Rel.
                                                PIR; A01970; L2HUNI.
HSSP; P01709; 2MCG.
InterPro; IPR003006; Ig_MHC
InterPro; IPR003596; Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J. Biol. Chem. 245:4475-4487(1970).
-i- MISCELLANEOUS: THIS IS A BENCE-JONES
PIR; A01963; L1HUHA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Shinoda T., Titani K., Putnam F.W.;
"Amino acid sequence of human lambda c
peptides and sequence of protein Ha.";
                                                                                                           "The primary structure of a monoclonal human lambda immunoglobulin L-chain of subgroup II (Bence-Jones Eur. J. Blochem. 26:10-32(1972).
                                                                                                                                                    MEDLINE=72233223;
Garver F.A., Hilso
                                                                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                 LV2B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00047; ig;
SMART; SM00406; IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                        Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00406; IGv; 1.
Immunoglobulin V region;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR003006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSSP; P01703; 7FAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=71103824; PubMed=5532227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LV1B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  [nterPro;
                                                                                                     ! - MISCELLANEOUS:
                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lambda chain
                                                                                                                                                                                                                                                                                                                                                                                                                          PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG-VFGSGTRLTVL
                                                                                                                                                                                                                                                                                                                                                                              PDRFSGSKSGTSASLAISGLRSEDEAHYHCAAWDYRLSAVVFGGGTQLTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 63.70; Conservative
                                                                                                                                                                                                               Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR003596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1
22
112
                                                                                                                                                  3223; PubMed=5043326; Hilschmann N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                V-I region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 01, Last
. 38, Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90
112
                                                                                                     THIS IS
                                                                                                                                                                                                               Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11896 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , Created)
, Last sequence up
, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ig_v.
  Bence-Jones protein; Glycop
PYRROLIDONE CARBOXYLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bence-Jones protein.
PYRROLIDONE CARBOXYLIC
BY SIMILARITY.
                                                                                                     A BENCE-JONES PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
Pred.
                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8D73378F3F5CD039 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           347.5;
No. 1.3
                                                                                                                                                                                                                                                                on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chains.
                                                                                                                                                                                                                                                                                                                 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                        human lambda-type
                                                                                                                                                                                                                                                                                                                 Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .3e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    II.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24;
  Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chymotryptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

```
RESULT 14
LUMAN
ID LIL HUMAN
ID 101-JAN
DT 01-JAN
OC Humanal
OX NCELLI
RA TOFT K
RA TOFT L
RC -1- MJ
CC -1- MJ
CC -1- MJ
CC -1- MI
CC -1
RESULT 15
LV1A_HUMAN
ID LV1A_H
AC P01699
DT 21-JUL
DT 21-JUL
                                                                                                                                                                                                                                                                                                δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SQ
FT
FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      **MEDITING**
**Control of the control of the contro
   LV1A_HUMAN
P01699;
21-JUL-1986
21-JUL-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
CARBOHYD
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LV11_HUMAN P06888;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JAN-1988 (Rel. 06, Creat
01-JAN-1988 (Rel. 06, Last
15-JUL-1999 (Rel. 38, Last
Ig lambda chain V-I region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Immunoglobulin V region; Amyloid; Glycoprotein.
CARBOHYD 104 104 N-LINKED (GLCNAC...
DISULFID 22 89 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ب
                                                                                                                                                                                                                                                                    PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                      PDRFSGSKSGTSATLGITGLQTGDEAIYYCGTWDNRRS-VFGGGTNVTVVG
                                                                                                                                                                                                                                                                                                                                                                                            QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SNRFSGSKSGKTASLTISGLQVEDEADYYCCSYAGNSTRVFGGGTRVTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QSALTQPASVSGSPGQSITISCTGTTSDVGSYNFVSWYQQNPGKAPKLMIYEGNKRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                          QSVLTQPPSLSAAPGQRVSISCSGSSSNIGKN-YVDWYQQLPGTAPKLLIFNNNKRPSGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22
96
111
111 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22
109
109
   (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA;
                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06, Created)
06, Last sequences 38, Last anno
01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90 B
96 N
111
11591 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
11414 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61.0%;
64.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61.5%;
59.1%;
Created)
Last sequ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence up annotation EPS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18;
sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 344; DB
Pred. No. 2.7e
14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 347;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BY SIMILARITY.
N-LINKED (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AD6D156584D087EB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               556A313E24D5AC73 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   e update)
ion update)
                                                                                         111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
.7e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
.4e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a carbohydrate-
lin light chain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THE SEQUENCED
                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                          59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
```

```
QΥ
                                                                                                                   В
                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                DT DDE DT DD DDE DT DD DD DD DD DD DD DD DD 
                                                                                                                                                                                                                                                                                                                                                                                   PIR; A01962; L1HUVO.

R InterPro; IPR003006; Ig_MHC.

R InterPro; IPR003596; Ig_v.

JR Pfam; PF00047; ig; 1.

DR SMART; SM00406; IGv; 1.

DR SMART; SM00406; IGv; 1.

PR Immunoglobulin V region; Bence-Jones protein.

KW Immunoglobulin V region; Bence-Jones Protein.

PYRROLIDONE CARBOXYLIC ACI

PYRROLITONE CARBOXYLIC ACI

BY SIMILARITY.
   В
                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 67; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-JUL-1999 (Rel. 38, Last Ig lambda chain V-I region
   0
                                                         61
                                                                                                                   μ
                                                                                                                                                                             _
                                                                                                          PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG-VFGSGTRLTVLG
PDRFSGSKSGTSASLAISGLQSENEADYFCATWDDSLDGPVFGGGTKVTVLG
                                                                                                                                                                                                                                                                                                                                                                          1
22
111
111 AA;
                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                11514
                                                                                                                                                                                                                                                         60.6%;
59.8%;
                                                                                                                                                                                                                                                                                                                                                                                MW;
                                                                                                                                                                                                                                 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  annotation update)
                                                                                                                                                                                                                              Score 342; DB 1;
Pred. No. 4.3e-27;
2; Mismatches 21
                                                                                                                                                                                                                                                                                                                                                                                21D9F64250DFC8E0 CRC64;
                                                                                                                                                                                                                                 21;
                                                                                                                                                                                                                                                                                    Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        equence of a , subgroup I e elucidation
                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MARKER
   111
                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of
                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the
```

2;

Search completed: August 12, 2002, 09:23:49
Job time: 59 sec

THIS PAGE BLANK (USPTO)

•

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
SPTREMBL_19:*

1: sp_archea:*

2: sp_bacteria:*

3: sp_fung1:*

4: sp_human:*

5: sp_invertebrate

6: sp_mammal:*

7: sp_mhc:*

8: sp_organelle:*

9: sp_plant:*

10: sp_plant:*

11: sp_votent:*

12: sp_virus:*

13: sp_vertebrate:

14: sp_unclassifit

15: sp_archeap:*

16: sp_bacteriap:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-786-015-4
564
1 QDVLTQPSSVSGSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  August 12, 2002, 09:24:40; Search time 43:19 Seconds (without alignments) 444.604 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      562222 seqs, 172994929 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QDVLTQPSSVSGSLGQRVSI.....SYQSTYSGVFGSGTRLTVLG 111
                                                                                                                                           sp_organelle:*
sp_phage:*
 sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                   sp_invertebrate:*
                                                                        sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        562222
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

16	15	14	13	12	11	10	9	80	7	6	υī	4	ω	2		Result No.
255.5	255.5	259.5	260	264	265	267	267.5	282	301.5	304	310	312.5	322	337.5	362.5	Score
45.3	45.3	46.0	46.1	46.8	47.0	47.3	47.4	50.0	53.5	53.9	55.0	55.4	57.1	59.8	64.3	Query Match 1
108	107	108	233	107	106	107	108	235	107	107	116	112	112	108	236	Length 1
4	11	4	4	4	ۍ	4	4	11	4	4	4	4	4	4	4	DB
Q9UL79	Q9ERZ9	Q9UL70	Q96169	Q9UL81	Q9U410	Q96SA9	Q9UL77	Q99M11	Q9UL82	Q9NSD6	Q96JD0	Q96JD1	Q96JD2	Q96SB0	Q96E61	ID
Q9u179 homo sapien	Q9erz9 mus musculu	Q9u170 homo sapien	Q96i69 homo sapien	Q9ul81 homo sapien	Q9u410 schistosoma	Q96sa9 homo sapien	Q9u177 homo sapien	Q99m11 mus musculu	Q9u182 homo sapien	Q9nsd6 homo sapien	Q96jd0 homo sapien	Q96jd1 homo sapien	Q96jd2 homo sapien	Q96sb0 homo sapien	Q96e61 homo sapien	Description

4 U	4.4	43	42	41	40	39	38	37	36	35	34	<u>υ</u>	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
172	194.5	197	200	204.5	208.5	215.5	217	218	222.5	223.5	225.5	225.5	227.5	228.5	231	231.5	232	234.5	240	241	241.5	243.5	244.5	245	247	249	250	254
30.5	34.5							38.7	٠			40.0	40.3	40.5	41.0	41.0	41.1	41.6	42.6	42.7	•	43.2	•		43.8	44.1	44.3	45.0
123	93	103	154	116	234	107	241	99	298	109	211	104	114	109	235	233	109	111	233	238	214	127	108	101	109	109	97	109
1	4.	11	11	4	11	11	11	11	11	11	11	11	4	6	11	11	11	11	11	11	11	11	4	11	4	4	11	4
Q61243	Q9UL76	Q9JL80	Q91xK2	Q96PF6	Q91WF8	Q9JL84	Q921A6	Q9JL74	Q9QYF0	Q920E6	Q91XL0	Q9JL82	Q9UL80	Q9N0W5	Q91W12	Q91WS9	Q9ET13	Q920E9	Q91V32	Q99M37	Q9R1A5	Q925S9	Q9UL83	Q9JL78	Q9UL86	Q9UL85	Q9JL76	Q9UL78
Q61243 mus musculu	homo	Q9j180 mus musculu	Q91xk2 mus musculu	Q96pf6 homo sapien	Q91wf8 mus musculu		Q921a6 mus musculu	Q9j174 mus musculu	Q9qyf0 mus musculu	Bum	mus	Q9j182 mus musculu	homo	Q9n0w5 oryctolagus	mus	Q91ws9 mus musculu	mus	mus	m ad	Bum	Q9r1a5 mus musculu	mus	-	Bum		Q9u185 homo sapien	Q9j176 mus musculu	Q9u178 homo sapien

ALIGNMENTS

RESULT Q96SB0 ID Q AC Q DT 0	AC OCCUPANT	RESULT
.T 2 30 Q96SB0 PRELIMINARY; PRT; 108 AA. Q96SB0; Q1-DEC-2001 (TrEMBLrel. 19, Created)	Q96E61 PRELIMINARY; PRT; 236 AA. Q96E61; Q96E61; Q1-DEC-2001 (TIEMBLICEL. 19, Casted) Q1-DEC-2001 (TIEMBLICEL. 19, Last sequence update) Q1-DEC-2001 (TIEMBLICEL. 19, Last sequence update) Q1-DEC-2001 (TIEMBLICEL. 19, Last annotation update) Q1-DEC-2001 (TIEMBLICEL. 19, Last annotation update) Q1-DEC-2001 (TIEMBLICEL. 19, Last annotation update) Q1-DEC-2001 (TIEMBLICEL. 19, Last sequence update) Q2-DEC-2001 (TIE	7 1 1:

1;

```
RESULT
Q96-D2
ID Q96-D2
PT DT Q99-DT 
RESULT
Q96JD1
                                                                                                                    Ş
                                                                                                                                                               B
                                                                                  밁
                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-DEC-2001 (Treme
01-DEC-2001 (Treme
01-DEC-2001 (Treme
01-DEC-2001 (Treme
AMYLOID LAMBDA 6 I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q96JD2
Q96JD2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Adderson E.E., Shikhman A.R., Ward K.E., Cunningham M.W.; "Molecular analysis of polyreactive monoclonal antibodies from rheumatic carditis: human anti-N-acetylglucosamine/anti-myosin antibody V region genes.";
J. Immunol. 161:2020-2031(1998).
EMBL; U96394; AAB68783.1; -.
                                                                                                                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                               Perfetti V., Casarini S., Colli Vignarelli M., "Amyloid lambda 6 light chain variable region Submitted (MAY-2000) to the EMBL/GenBank/DDBJ EMBL; AF267873; AAK58585.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-BONE MARROW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human)
Eukaryota; Metazoa; (
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE=98375893; PubMed=9712075;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARIABLE REGION (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-DEC-2001 (TrEMBLrel. 19, Las 01-DEC-2001 (TrEMBLrel. 19, Las ANTI-STREPTOCOCCAL/ANTI-MYOSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-DEC-2001 (TrEMBLrel. 01-DEC-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                  62
                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                               w
                                                                                                                                                                                                      w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match
                                                                                                                                                         RFSGSIDSSSNSASLTISGLMTEDEADYYCQSFDDSTNQGVFGGGTRLTVL
                                                                                                 RFSGS--RSGNTATLTISSLQAEDEADYYCASY-QSTYSGVFGSGTRLTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QSVLTQPPSASGTPGQRVTISCSGSSSNIGSN-YVYWYQQLPGTAPKLLIYRNNQRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PDRFSGSKSGTSASLAISGLRSEDEADYYCAAWDDRLSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSG
                                                                                                                                                                                                                                               l Similarity 60.4
67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                     112 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TIEMBLIEL 19, Created)
(TIEMBLIEL 19, Last sequence update)
(TIEMBLIEL 19, Last annotation update)
BDA 6 LIGHT CHAIN VARIABLE REGION NEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                     11908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11594
                                                                                                                                                                                                                                                                 57.1%;
60.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59.8%;
65.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MW;
                                                                                                                                                                                                                                                                                                                                                     ΜW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 337.5; I
Pred. No. 1.4e
14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
SIN IMMUNOGLOBULIN LAMBDA
                                                                                                                                                                                                                                                                   Score 322; 1
                                                                                                                                                                                                                                             Pred. No. 5.3e
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Ve Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                     080B4B37E2360B06 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F4B5DC478A043F48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               337.5; DB 4;
No. 1.4e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112
                                                                                                                                                                                                                                  DB 4,
5.3e-25;
26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98
                                                                                                                                                                                                                                                                                                                                                                                                                                 NEG.";
I databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                  Length 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (FRAGMENT).
                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIGHT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              108;
                                                                                                                      110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHAIN
                                                                                                                                                                                                                                             4;
                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                    62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                             61
                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŗ
```

٠,

RESULT

σ

```
DЬ
                  QY
                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                        B
 В
                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 67
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 65
                                                                                                                                                                                                                                                                          Q96JD0;
01-DEC-2001
01-DEC-2001
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q96JD1;
Q96JD1;
Q1-DEC-2001
01-DEC-2001
01-DEC-2001
                                                                                                                                      EMBL; AF NON_TER NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perfetti V., Casarini S., Colli Vignarelli M., 
"Amyloid lambda 6 light chain variable region 
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ 
EMBL, AF267875; AAK58587.1; -
                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                               01-DEC-2001 (TremBLrel. 19, C
01-DEC-2001 (TremBLrel. 19, I
01-DEC-2001 (TremBLrel. 19, I
AMYLOID LAMBDA 6 LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AMYLOID LAMBDA 6 LIGH
Homo sapiens (Human).
Eukaryota; Metazoa; C
                                                                                                                                                                                              SEQUENCE FROM N.A.
TISSUE=BONE MARROW;
                                                                                                                                                                                                                                                       Homo sapiens (Human).
                                                                                                                             SEQUENCE
                                                                                                                                                                                                                           NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                  096JD0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-BONE MARROW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mammalia; Eutheria;
 62
                   63
                                                                                                                                                                                                                                                                                                                                                                                    63
                                                                                                                                                                                                                                                                                                                                                                 62
                                       ω
                                                                                                                                                                                                                                                                                                                                     տ
                                                RFSGS--RSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                                        VLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGIPD
RFSGSIDSSSNSASLTISGLKTEDEADYYCQSYDSSIGNVIFGGGTKLTVLG
                  RFSGS--RSGNTATLTISSLQAEDEADYYCASYQSTYSGV-FGSGTRLTVLG
                                                                                                                                                                                                                                                                                                                                                                RESGSIDSSSNSASLTISGLKTEDEADYYCQSYDSNNYALFGGGTQLTVLG
                                                                                                                                                                                                                                                                                                                                                                                                      MLTQPHSVSESPGKTITISCTRSSGSIASN-YVQWYQQRPGSAPTTVIYEDNQRPSGVPD
                                                                             . Similarity 59.8 67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                            116
116 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               L (TrEMBLrel. 19, La
L (TrEMBLrel. 19, La
MBDA 6 LIGHT CHAIN )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             112 AA;
                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                             ĀΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112
12047
                                                                                                                            116
12294 MW;
                                                                                                                                                                                                                                     Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Primates;
                                                                                                                                                                                                                                              Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   55.4%;
58.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata;
                                                                                        59
                                                                                      . 88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19, Createa;
19, Last sequence update;
19, Last annotation update;
19, Last annotation pip (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                            14;
                                                                                                                                                                                                                                                                Last sequence up Last annotation N VARIABLE REGION
                                                                            Score 310; DB
Pred. No. 8.9e
13; Mismatches
                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 312.5;
Pred. No. 4.8e
14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Ve Catarrhini;
                                                                                                                                                                                                                                    Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0D3885AC23567B9F CRC64;
                                                                                                                            F7B0E9F49FAE369E CRC64;
                                                                                      310;
No. 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                   312.5; DB 4
No. 4.8e-24;
                                      YVQWYQLRPGSAPTTVIYEDNQRPSGVPD
                                                                                                                                                                                                                                                                                                                  116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112
                                                                       DB 4,
8.9e-24;
28;
                                                                                                                                                                                                                                                                  REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                   update;
                                                                                                                                                                                                                                    Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hominidae;
                                                                                                                                                                                     ×
                                                                                                                                                                                                                                                                 update)
N SAR (F
                                                                                                                                                                 n SAR.";
databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                              29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                               Length 116;
                                                                                                                                                                                                                                                                  (FRAGMENT).
                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               112;
                                                                                                                                                                                                                                                                                                                                                                112
                   111
                                                                             4;
                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                         62
                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                      61
                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                             ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                            2
```

```
O9NSD6
AC O9NSD6;
AC O9NSD6;
AC O9NSD6;
DT 01-OCT---
DT 01-DEC---
DE HYPOTHET
OS HOMO Sag
OC Eukaryol
OC Mammalik
OX NCBI_Tax
RN [1]
RP SEQUENCI
RA HOMMANN
RI SEQUENCI
RA SEQUENCI
SON SEQUENCI
SON SEQUENCI
RA SON SON SEQUENCI
RA S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
Q9UL82
    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 66
                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9UL82 PRELIMINARY;
Q9UL82;
01-MAY-2000 (TrEMBLrel. 13, C
01-MAY-2000 (TrEMBLrel. 13, L
01-DEC-2001 (TrEMBLrel. 19, L
MYOSIN-REACTIVE IMMUNOGLOBULI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-OCT-2000 (TrEMBLrel. 15, Last 01-DEC-2001 (TrEMBLrel. 19, Last HYPOTHETICAL PROTEIN (FRAGMENT). Homo saptens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
NON_TER
SEQUENCE
NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                Clin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Autoimmunity.";
Submitted (JUL-1995) to the
EMBL; L43092; AAA69746.2; -.
HSSP; P01709; 2MCG.
                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-98277139; PubMed-9614934;
Van der Merwe P.L.,
                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                           HSSP; P01703; 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00047; 1g; 1.
SMART; SM00406; IGv; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-LYMPHOCYTE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID-9606;
                                                               SMART; SM00406;
                                                                                    Pfam;
                                                                                                                                                                                                        fetus."
                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hohmann A.;
                                                                                                     InterPro;
                                                                                                                        InterPro;
                                                                                                                                                                                                                                           Coung D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                 (FRAGMENT)
                                                                                                                                                                                                                        Myosin-reactive autoantibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                            rPro; IPR003006; Ig_MHC.
rrPro; IPR003596; Ig_v.
rpro; IPF00047; 1g; 1.
rr; SM00406; IGv; 1.
rer 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGIPDR 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LTQDPVVSVALGQTVRITCQGDSLR---SYYASWYQQKPGQAPVLVIYGKNNRPSGIPDR
                                                                                                                                                             Immunol. Immunopathol. AF035032; AAD56268.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR003006; Ig_wHC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      107
107 AA;
    107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
    Ā,
                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBLrel. 13, Last sequence update)
EMBLrel. 19, Last annotation update)
IMMUNOGLOBULIN LIGHT CHAIN VARIABLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11306 MW;
    11445 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                87:184-192(1998)
                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vo
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A2B04B37187A5F00
    52F0CC1AB26821DC CRC64;
                                                                                                                                                                                                                           in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      o
.
                                                                                                                                                                                                                        rheumatic
                                                                                                                                                                                                                                                              Kalis N.N., Berney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        w
                                                                                                                                                                                                                                                                                                                                                                 Vertebrata; Euteleostomi;
i; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
.2e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                S.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111
                                                                                                                                                                                                                           normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
```

```
RESULT
Q9UL77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
Q99M11
ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SO DE PROPERTO DE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR003597; Ig_c1
InterPro; IPR003500; Ig_l1
InterPro; IPR003006; Ig_MH
InterPro; IPR003956; Ig_v
Pfam; PF00047; Ig; 2.
SMART; SM00409; IG; 2.
SMART; SM00406; IGv; 1.
SMART; SM00406; IGv; 1.
SMART; SM00410; IG_11ke; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Strausberg R.;
Submitted (JAN-2001) t
EMBL; BC002129; AAH021
HSSP; P01703; 7FAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updat
HYPOTHETICAL 25.4 KDA PROTEIN.
Mus musculus (Mouse).
                                                                                                                            01-MAY-2000 (Tri
01-DEC-2001 (Tri
MYOSIN-REACTIVE
                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical protein.
SEQUENCE 235 AA; 25403 MW; 39807BFE6782A3FB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606
                                                                                     Homo sapiens (Human).
                                                                                                                                                                                               01-MAY-2000
                                                                                                                                                                                                                    Q9UL77;
                                                                                                                                                                                                                                           Q9UL77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00290; IG_MHC; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q99м11;
                                                                                                            (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                                                                                             61 PDRFSGS--RSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVL 110
                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 QDVLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 LTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGIPDR
                                                                                                                                                                                                                                                                                                                                                                                                                                       QLVLTQPSSYSTSLGSTAKLPCKASTGNI-GDSYYNWYQQYMGRSPTNMIYGDDLRPSGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTVL 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LTQPSSVSVSPGQTARITCSG----DLLAKKYARWFQQKPGQAPILVIFKDTERPSGIPER
                                                                                                                                                                                                                                                                                                                                                        SDRFSGSIDSSSNSAFLTIQNVQADDEADYYCQSYSSGIR-VFGGGTKLTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FSGSSSGTTVTLTISGAQVEDEADYYCYSASDNNGRVFGGGTKLTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IPR003599;
                                                                                                                          (TremBLrel. 13, Created)
(TremBLrel. 13, Last sequence update)
(TremBLrel. 19, Last annotation update)
TIVE IMMUNOGLOBULIN LIGHT CHAIN VARIABLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IG_11ke; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAH02129
                                         Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ig.
Ig_cl.
Ig_like.
Ig_MHC.
Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred.
7; Mis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 282;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 301.5; DB Pred. No. 5.7e-23
                                         Craniata; V
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vert
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            235
                                                                                                                                                                                                                                           108
                                         Vertebrata;
i; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vertebrata; Euteleostomi;
thi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L.4e-20;
nes 33;
                                                                                                                                                                                                                                           ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                              Euteleostomi;
                                                                                                                                 REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 235;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               107;
                                                                                                                                                                                                                                                                                                                                                        129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ų.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ψ
```

```
QSESSED IN COLOR REPORTS THE PRINCE REPORTS THE PRI
RESULT
Q9U410
                                                                                                                δÃ
                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 59
                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q96SA9;
01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
ANTI-STREPTOCOCCAL/ANTI-MYOSIN IMMUNOGLOBULIN KAPPA LIGHT
VARIABLE REGION (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fetus.";
Clin. Im
EMBL; AF
                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE-98375893; PubMed-9712075;
Adderson E.E., Shikhman A.R., Ward K.E., Cunningham M.W.;
"Molecular analysis of polyreactive monoclonal antibodies from rheumatic carditis: human anti-N-acetylglucosamine/anti-myosin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE-98277139; PubMed-9614934;
Yan der Merwe P.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q96SA9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; ig; 1.
SMART; SM00406; IGv; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HSSP; P01607; 1REI.
                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                 antibody V region genes.";
J. Immunol. 161:2020-2031(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Myosin-reactive autoantibodies in rheumatic carditis and normal
                                                                                61
                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                   11
                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                             RESGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTV 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LTQ-PSSYSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGIPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RFSGSGSGTDFTLTISSLQPEDFATYYCQQSYST-SWTFGEGTKVEI
                                                                                                                                                                                                                                                                                                                                                                                               Juno1. 101.201.
U96396; AAB68785.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Immunol. Immunopathol. AF035037; AAD56273.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D.C.;
                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                              107
107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΑĄ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        108
11738 MW;
                                                                                                                                                                                                                                                                                                                                                    11520 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chordata;
Primates;
                                                                                                                                                                                                                                                                 47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47.48;
55.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12;
                                                                                                                                                                                                                                              15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87:184-192(1998)
                                                                                                                                                                                                                                                                 Score 267; DB 4; Pred. No. 1.7e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                  4BB43E9C5B577F16 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C06681716C4D16F3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                         -SSYLNWYQQKPGKAPKLLIYAASSLQSGVPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         267.5;
No. 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               υΒ 4;
1.5e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hominidae;
                                                                                                                                                                                                                                              26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Berney
                                                                                                                                                                                                                                                                                  Length 107
                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ψ
```

```
Q SUBLT Q SUBT Q SUBLT Q SUBLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCOMPANDA 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 58
                                                                                            Interpro; IPR003006; Ig_1
Interpro; IPR003596; Ig_1
Pfam; PF00047; ig; 1.
SMART; SM00406; IGV; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR003006; Ig_N
InterPro; IPR003596; Ig_N
Pfam; PF00047; Ig; I
SMART; SM00406; IGv; I
NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9UL81;
01-MAY-2000 (
01-MAY-2000 (
01-DEC-2001 (
                                          SMART; S
NON_TER
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=98277139; PubMed=9614934;
MEDLINE=98277139; PubMed=9614934;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
MYOSIN-REACTIVE IMMUNOGLOBULIN LIGHT CHAIN VARIABLE
(FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAY-2000 (TIEMBLIREL 13, Created 01-MAY-2000 (TIEMBLIREL 13, Last sec 01-DEC-2001 (TIEMBLIREL 19, Last ar MONOCLONAL ANTI-IDIOTYPIC ANTIBODY VARIABLE REGION (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9U410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (FRAGMENT).
Homo sapiens (Human).
Homo sapiens (Human).
'--rvota; Metazoa; Chordata; '---ria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

SONG X.T., Feng Z.Q., Qiu Z.N., Li Y.O., Huang H.L., Guan X.H.;

"Amplification, cloning and sequence analysis of the light chair

variable region gene of monoclonal anti-idiotypic antibody NP30

Schistosoma japonicum.";

Schistosoma japonicum.";

Submitted (NOV-1999) to the EMBL/GenBank/DDBJ databases.

EMBL; AF207620; AAF19434.1; -.

HSSP; P01679; ZBBJ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schistosoma japonicum (Blood fluke).
Eukaryota; Metazoa; Platyhelminthes;
Schistosomatoidea; Schistosomatidae;
                                                                                                                                                                                                                               HSSP;
             SEQUENCE
                                                                                                                                                                                                                                                                                                                              fetus.",
                                                                                                                                                                                                                                                                                                                                                                                                Young D.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9UL81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=6182;
                                                                                                                                                                                                                                                                                                                                                            "Myosin-reactive autoantibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60 IPDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRL 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 QDVLTQ-PSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASG:::||| |: :| || || :: ||| || :: |||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VPVRFSGSGSGTSYSLTISRMEAEDAATYYCOOWTS-YPFTFGSGTKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENLLTQSPAIMSASPGEKVTMTCSASSS----VSYVYWYLQKPGSSPRLLIYDTSNLASG
                                                                                                                                                                                                                               Immunol. Immunopathol. 8 AF035033; AAD56269.1; -. P01607; IREI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
58; Conserv
107
107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel. 13, Created)
(TrEMBLrel. 13, Last sequence update)
(TrEMBLrel. 19, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106
11478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 47.0%;
53.7%;
             11501
                                                                                                                                                                 Ig_v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ig_MHC
                                                                                                                                                                                                  Ig_MHC
             ₩;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 265;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                 87:184-192(1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F20F544426BAE63E CRC64;
             070549FDE0754748 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                            in rheumatic carditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NP30
                                                                                                                                                                                                                                                                                                                                                                                                                           Kalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Trematoda; I
Schistosoma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IMMUNOGLOBULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5; I
2.6e-19;
nes 24;
                                                                                                                                                                                                                                                                                                                                                                                                                           N.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                           Berney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Digenea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo
                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                              ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Strigeidida;
                                                                                                                                                                                                                                                                                                                                                            normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٠,
و
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
```

```
Ş
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                              Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Ma
Best Loc
Matches
                                                                                                                                         Q9UL70 PRELIFICATION OF TEMBLE 1. 13, Created)
Q9UL70;
Q9UL70;
Q9UL70;
Q9UL70;
Q1-AAY-2000 (TEMBLE-1. 13, Last sequence update)
Q1-DEC-2001 (TEMBLE-1. 19, Last annotation update)
                  Clin.
EMBL;
HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              O96169 PRELIMINARY; PRT; 233 AA. (96169; O1-DEC-2001 (TrEMBLrel. 19, Created) O1-DEC-2001 (TrEMBLrel. 19, Last sequence update) O1-DEC-2001 (TrEMBLrel. 19, Last annotation update) UNKNOWN (PROTEIN FOR MGC:12849).
                                                                         SEQUENCE FROM N.A.
MEDLINE=98277139; PubMed=9614934;
Van der Merwe P.L.,
                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                             Submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases EMBL; BC007782; AAH07782.1; - SEQUENCE 233 AA; 24802 MW; C694F8397B27650B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa;
Mammalia; Eutheria;
         InterPro;
                                                fetus."
                                                                                                                                                                                                                                                                                                                                                                                                                          Strausberg R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-PRIMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
                                                                    Young D.C.
                                                         Myosin-reactive autoantibodies
                                                                                                                                                                                                                                                                   79
                                                                                                                                                                                                                                                                                    63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                        22
                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                  Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match
    ; AF035044; AAD302; P01607; IREI.
                                                                                                                                                                                                                                                                VLTQPSSVSGSLGQRVSITCSGSSSNIGGNAYVGWYQQVPGSAPRLLISATTDRASGIPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VLTQPASVSVAPGQTARITCGG--SNLGSKS-VNWYQLRPGQAPILVVYENKERPAGIPE
                                       Immunol.
                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                            Immunopathol.; AAD56280.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                    B-CELLS
                                                                                                                            Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46.88;
                                                                                                                                                                                                                                                                                                                                                       46.1%;
52.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                    FROM
                                                                                                                                                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                                                                                                    TONSILS,
                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 264; DB 4;
Pred. No. 3.3e-19;
3; Mismatches 28;
                                      87:184-192(1998)
                                                                                                                            Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Ve
Catarrhini;
                                                          in
                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                       NO.
                                                                                                                                                                                                                                                                                                                                                                 260;
                                                         rheumatic
                                                                             Kalis
                                                                                                                                                                                                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata; Euteleostomi;
                                                                            N. N.
                                                                                                                                                                                                                                                                                                                                                        .2e-1
                                                                                                                                                                                                                                                                                                                                                                 DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hominidae;
                                                                                                                                                                                                                                                                                                                                              32;
                                                                            Berney
                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 107
                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HOMO
                                                          and
                                                                             S.M
                                                                                                                                                                                                                                                                                   111
                                                          normal
                                                                                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                                                                                                                                                                        78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62
                                                                                                                                                                                                                                                                                                                                              w
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
```

```
RESULT
Q9ERZ9
    Дb
                                       δÃ
                                                                                     В
                                                                                                                             Qy
                                                                                                                                                                                                                                                                                 ALD DARREN PRESENTATION OF THE PRESENTATION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SQ
                                                                                                                                                                     Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
Chen P., Deng J.B., Wang
"Cloning and sequencing o
genes of an anti-NTNF-a m
J. Cell. Mol. Immunol. 12
                                                                                                                                                                                                                                                                            NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ANTI human, (Mouse),
Mus musculus (Mouse),
Eukaryota, Metazoa; Chordata;
Eukaryota; Metazoa; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF0
SMART; SM
NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. Chen P., Deng J.B., Wang Z.L., Han H., Yao L.B., Su C.Z Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases EMBL; AF262753; AA623804.1; -. HSSP; P80362; 1WTL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.

Chen P., Deng J.B., Wang Z.L., Han H., Yao L.B.,
"Construction and sequencing of the single-chain
human TNF-alpha specific monoclonal antibody.";
Ti. 4 Chun i Ta Hsueh Hsueh Pao 19:373-376(1998).
                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
ANTI HUMAN TNF-ALPHA LIGHT CHAIN VARIABLE REGION (F
                                                                                                                                                                                                                                                                                                                    Pfam; PF00047; 1g; 1.
SMART; SM00409; IG; 1.
SMART; SM00406; IGV; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9ERZ9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9ERZ9
                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [2]
                                                                                                                                                                                           y Match
Local S
  61
                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                         4 LTQ-PSSVSGSLGQRVSITCSGSSSNIGGNA---YVGWYQQVPGSAPRLLISATTDRASG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 LTQ-PSSYSGSLGQRYSITCSGSSSNIGGNAYYGWYQQYPGSAPRLLISATTDRASGIPD
VPDRFMGSGSGTDFTLTISSVQTEDLADYFCQQHYRT-PFTFGSGTKL
                          IPDRFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRL
                                                                                   MTQSPSSLAMSVGQKVTMSCKSSQSVLNSNTQKNYLAWYQKKPGQSPELLVYFASTRESG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RFSGSRSGNTATLTISSLQAEDEADYYCASYQSTYSGVFGSGTRLTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESGSGSGTDFTLTISSLQPEDVATYYCQKYNSA-PRTFGPGTKLEI 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MTQSPSSLSASVGDRVTTTCRASQ---GISNYLAWYQQKPGKVPKSLIYAASTLQSGVPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF00047;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SM00406;
                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                  ; IPR003599;
; IPR003006;
; IPR003596;
                                                                                                                                                                                                                                                                      107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  108
108 ‡
                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ig; 1.
5; IGv;
                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    108
11633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , Wang Z.L., Han H., ncing of the light corner amonoclonal ant nol. 12:21-26(1996).
                                                                                                                                                                                                                                                                                                  107
                                                                                                                                                                                           45.3%;
49.1%;
                                                                                                                                                                                                                                                                            11784
                                                                                                                                                                                                                                                                                                                                                                                    Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                        Ig.
MHC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.0%;
53.3%;
                                                                                                                                                                                                                                                                               MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₩;
                                                                                                                                                                       19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 259.5;
Pred. No. 9.6e
11; Mismatches
                                                                                                                                                                Score 255.5; DB 11,
Pred. No. 2.4e-18;
""ematches 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Han H., Su C.Z.;
light chain fragment of variable region antibody.";
                                                                                                                                                                                                                                                                            2B15EEA6604A26C3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B7BEDC3E41FCCA37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .6e-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9,
                                                                                                                                                                                                               11;
                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Su C.Z.;
antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (FRAGMENT).
                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Murinae;
  107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                                                                                                                                                                                                                 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                       5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of
                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                       ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
```

Search completed: August 12, 2002, 09:24:41 Job time: 111 sec

4.5

į

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   on:
       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 0
                           4450.5

443.5

443.5

4441

440

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.5

438.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR_71:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length:
    BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-786-015-2
614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                August 12, 2002, 09:22:50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          283138 seqs, 96089334 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVQLQESGPSLVKPSQTLSL......DSVPYGLDYWSPGLLLTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pir1: *
pir2: *
pir3: *
pir4: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
    GenCore version
(c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gapext 0.5
                                                                                              $54244
$54249
$54234
$54245
$54249
$54249
$54243
$54243
$54242
$54241
$54244
$54241
$54244
$54227
$54244
$54227
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$54224
$5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search time 28.26 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (without alignments)
411.423 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ltd
Description
                                                                                                               mu heavy chain
                                            mu heavy
mu chair
  mu heavy cha
heavy chain
                                               u heavy chain
u chain - shee
amma-1 chain -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
```

45	44	43	42	41	40	39	38	37	36	35	34	ω G	32	31	30
369	369.5	370	370.5	370.5	371	372.5	373	373	373.5	375	375	375.5	375.5	378.5	380.5
60.1	60.2	60.3	60.3	60.3	60.4	60.7	60.7	60.7	60.8	61.1	61.1	61.2	61.2	61.6	62.0
117	120	140	139	135	231	116	140	140	122	121	121	135	117	118	141
N	N	N	N	N	N	N	N	N	N	N	N	2	N	N	N
128195	PL0087	S55028	A32456	PL0100	PC4155	S42484	137782	S14238 .	S20809	S33131	D30560	S31913	S38563	S32786	S52446
Ig heavy chain V r	Ig heavy chain V r	Ig heavy chain V r	Ig heavy chain pre	Ig heavy chain pre	Ig gamma-2b chain	Ig heavy chain V r	Ig variable region	Ig gamma-1 chain p	Ig heavy chain V r	Ig heavy chain v r	Ig heavy chain V r	Ig gamma-2A chain	Ig heavy chain V r	Ig heavy chain (an	Ig heavy chain V r

ALIGNMENTS

Ig mu heavy chain V region precursor - sheep (fragment)
C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 21-Jan-2000
C;Accession: S54249
R;Dufour, V.; Nau, F.
submitted to the EMBL Data Library, April 1995
A;Description: Sheep immunoglobulin mu heavy chain variable region sequence
A;Reference number: S54225

A;Status: preliminary A;Molecule type: mRNA A;Residues: 1-143 <DUF>

A; Description: Sheep A; Reference number: A; Accession: S54249

```
RESULT 2
Syst236
Ig mu heavy chain V region precursor - sheep (fragment)
C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 21-Jan-2000
C;Accession: Syst236
R;Dufour, V:; Nau, F.
submitted to the EMBL Data Library, April 1995
A;Description: Sheep immunoglobulin mu heavy chain variable region sequence.
A;Reference number: Syst225
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-141 <DUFY
A;Cross-references: EMBL:Z49161; NID:g794111; PIDN:CAA89030.1; PID:g794112
                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: EMBL:Z49193; NID:g794139; PIDN:CAA89052.1; PID:g794140 C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: immunoglobulin C;Keywords: immunoglobulin F;34-116/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 73.4
Best Local Similarity 73.4
Matches 91; Conservative
                                                                                                                                                                                                                                                                                                                                                  140 TVSS
                                                                                                                                                                                                                                                                                                                                                                                    118 TVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 73.4%; Score 450.5; DB 2
73.4%; Pred. No. 5.7e-32;
tive 11; Mismatches 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲
```

```
Ig mu heavy chain V region precursor - sheep (fragment)
C;Species: Ovis orientalls aries, Ovis ammon aries (domest
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_c
C;Accession: S54245
R;Dufour, V:; Nau, F.
submitted to the EMBL Data Library, April 1995
A;Description: Sheep immunoglobulin mu heavy chain variabl.
A;Reference number: S54225
A;Accession: S54245
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-140 <DUF>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 submitted to the EMBL Data Library, April 1995
A; Description: Sheep immunoglobulin mu heavy chain variable region sequence A; Description: Sheep immunoglobulin mu heavy chain variable region sequence A; Reference number: S54225
A; Accession: S54234
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-137 < DUF>
A; Residues: 1-137 < DUF>
A; Cross-references: EMBL: 249166; NID: 9794107; PIDN: CAA89035.1; PID: 9794108
C; Koywords: immunoglobulin v region; immunoglobulin homology
C; Koywords: immunoglobulin homology < TMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 3

$54234

Ig mu heavy chain V region precursor - sheep (fragment)
C;Species: Ovis orientalis aries, Ovis ammon aries (dome C;Date: 08-U1-1995 #sequence_revision 03-Aug-1995 #tex:
C;Accession: $54234
R;Dufour, V.; Nau, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Superfamily: immunoglobulin V C; Keywords: immunoglobulin F; 34-116/Domain: immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                  137
                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                    80
                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S 137
                                                                                                                                                                                                                                                                                                                  S 121
                                                                                                                                                                                                                                                                                                                                                                  TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                    QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PALKSRLSITRDTSKSQVSLSLSSVTSEDTAMYYCVRSFFGGKY-WG--YWGPGLLVTVS
                                                                                                                                                                                                                                                                                                                                                                                                                    QVRLQESGPSLVKPSQTLSLTCTVSGFSLTTYSVGWVRQAPGKALEWLGGIENDGCAGYH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYG--LDYWSPGLLLT 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunoglobulin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72.2%;
73.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72.48;
73.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          region;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 443.5;
Pred. No. 2.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 444.5; DB 2
Pred. No. 1.8e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunoglobulin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .2e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2:
                                                                                                                                                        (domestic sheep)
#text_change 23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #text_change
                                                                                      variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (domestic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sheep)
nge 23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
••
                                                                                      sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      138
                                                                                                                                                                                                                                                                                                                                                                                                                    79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
```

```
Ig mu heavy chain V region precursor - sheep (fragment)
C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Species: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 23-May-1997
C;Accession: S54235
R;Dufour, V; Nau, F.
submitted to the EMBL Data Library, April 1995
A;Description: Sheep immunoglobulin mu heavy chain variable region sequence
A;Reference number: S54225
                                                Ig mu heavy chain V region precursor - sheep (fragment)
(;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 23-
C;Accession: S54239
R;Dufour V; Nau, F
submitted to the EMBL Data Library, April 1995
A,Description: Sheep immunoglobulin mu heavy chain variable region
A;Reference number: S54225
A; Status:
A; Molecule
                                                                                                                                                                                                               RESULT
S54239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:249159; NID:g794131; PIDN:CAA89028.1; PID:g794132 C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: immunoglobulin C;Keywords: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:249157
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: immunoglobulin
C;Keywords: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: S:
A; Accession: S54235
A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                    A; Reference number: A; Accession: S54239
                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-132 < DUF>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                              132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                  121 S 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     140 S
                                                                                                                                                                                                                                                                                                                                                                        08
                                                                                                                                                                                                                                                                                                                                                                                           61 TALQSKLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLIVS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80 PALKSRLSISRDTSKSQVSLSLSSVTTEDTAVYYCARGGIYYSTWTGINYWGPGLLVTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _
                                                                                                                                                                                                                                   σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                            Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QVQLQGSGPSLVKPSQTLFLTCTVSGFSLTSYAVNWVRQAPGKALEWVGNILNDGNTYYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                preliminary
                                                                                                                                                                                                                                                                                                                                                                        PALKSRLSITRDTSRSQVSLSLSSVTSEDTAMYYCAKSY----FEYWGPGLLVTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDXWSPGLLLTVS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVQLQESGPCLVKPSQTLSLTCTVSGFSLTSRGVNWVRQAPGKSLEWVGGIWSDGSTDYK 79
                                                                                                                                                                                                                                                                                              132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71.8%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 441; DB 2;
Pred. No. 3.4e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 442; DB 2
Pred. No. 3e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                        region sequence
                                                                                                                                                       23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
```

0

```
Ig mu heavy chain V region precursor - sheep (fragment)
C; Species: Ovis orientalis aries, Ovis ammon aries (domest C; Date: 08-U1-1995 #sequence_revision 03-Aug-1995 #text_c
C; Accession: S54240
R; Dufour, V; Nau, F.
submitted to the EMBL Data Library, April 1995
A; Description: Sheep immunoglobulin mu heavy chain variabl A; Reference number: S54225
A; Accession: S54240
A; Accession: S54240
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-140 CDUF>
A; Residues: 1-140 CDUF>
R;Dufour, V.; Nau, F.
submitted to the EMBL Data Library,
A;Description: Sheep immunoglobulin
A;Reference number: S54225
A;Accession: S54248
A;Status: preliminary
                                                                                          Ig mu heavy chain V region precursor - sheep (fragment) C;Species: Ovis orientalis aries, Ovis ammon aries (domu C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #tex:C;Accession: S54248
R;Dufour, V.; Nau, F.
                                                                                                                                                                                         RESULT
S54248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:249176; NID:g794120; PIDN:CAA89045.1; PID:g794121 C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: immunoglobulin C;Keywords: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Residues: 1-140 <DUF>
A; Cross-references: EMBL: 249175; NID: 9794118; PIDN: CAA89044.1; PID: 9794119
C; Superfamily: immunoglobulin V region; immunoglobulin homology
C; Keywords: immunoglobulin
C; Keywords: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Best I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           140
                                                                                                                                                                                                                                                                    140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 S 121
                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                         80 PALKSRRSITRDASKSQVSLSLSSVTTEDAAVYYCARTWYSGCACGSIDYWGPGLLVTVS
                                                                                                                                                                                                                                                                                                                                                                                                               20 QVRLQESGPSLVKPSQTLSLTCTVSGFSLTSNAVDWVRQAPGKVPEWLGGVSSDGSTYYN
                                                                                                                                                                                                                                                                                                                                                                                                                                1 QVQLQESGPSLVKPSQTLSLTCTVSGPSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                     S 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QVQLEESGPSLVKPSQTLSLTCTVSGFSLTSNNVGWVRQAPGKALEWVGDIYAGGSKEYS
                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                        TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PALKPRLSITRDTSKSQVSLSLSSVTTEDTAVYYCARDQPSSGVFGDYDYWGPGLLVTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunoglobulin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71.5%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71.78;
71.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 440; DB
Pred. No. 4.5e
10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 439; DB 2;
Pred. No. 5.4e-31;
                                                       . April 1995
mu heavy ch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                         chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
.5e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25;
                                                                                                                             (domestic sheep)
#text_change 21-Jan-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (domestic sho
#text_change
                                                         variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sheep)
nge 23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                         sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence
                                                                                                                                                                                                                                                                                                                                       139
                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
A; Molecule type: mRNA
A; Residues: 1-140 <DUF>
A; Residues: 1-140 <DUF>
A; Cross-references: EMBL: Z49172; NID: g794137; PIDN: CAA89041.1; PID: g794138
C; Superfamily: immunoglobulin v region; immunoglobulin homology
C; Keywords: immunoglobulin
F; 34-116/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
""+"hes 87; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-139 < CDUF\
A; Residues: 1-139 < CDUF\
A; Cross-references: EMBL: Z49165; NID:g794105; PIDN:CAA89034.1; PID:g794106
C; Superfamily: immunoglobulin V region; immunoglobulin homology
C; Keywords: immunoglobulin
F; 34-115/Domain: immunoglobulin homology < IMM>
             R; Dufour, V.; Nau, F.
submitted to the EMBL Data Library,
A;Description: Sheep immunoglobulin
A;Reference number: S54225
                                                                                       Ig mu heavy chain V region precursor - sheep (fragment) C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep) C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 21-C;Accession: S54242
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Dufour, V.; Nau, F.
submitted to the EMBL Data Library,
A;Description: Sheep immunoglobulin
A;Reference number: S54225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ig mu heavy chain v region precursor - C;Species: Ovis orientalis aries, Ovis C;Date: 08-7ul-1995 #sequence_revision C;Accession: S54233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: S54233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Matcn
Best Local Similarity 72.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              140
                                                                                                                                                                                                                                              139 S
                                                                                                                                                                                                                                                                                 121 S 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 S 121
                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                      79 PALKSRLSITRDPSKSQVSLSLSSVTSEDTAVYYCARAYRGYLYCHHIDYWGPGLLVTVS
                                                                                                                                                                                                                                                                                                                                        61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS 120
                                                                                                                                                                                                                                                                                                                                                                                             20 QVRLQESGPSLVKPSQTLSLTCTVSGFSLTSNAVGWVPQAPGKVAEWLGGMNNGG-TYYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20 QVQLQESGPSLVKPSQTLSLTCTVSGFSLSSDAVNWVRQAPGKALEWVGQIDNGGITNYN 79
                                                                                                                                                                                                                                                                                                                                                                                                              1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ß
: S54242
                                                                                                                                                                                                                                                139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71.5%; Sco
72.7%; Pro
tive 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 438.5; DB Pred. No. 6e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 439; DB 2;
Pred. No. 5.4e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   n mu heavv ch
                                   ∄
                                                  April 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sheep (fragment)
ammon aries (dom
03-Aug-1995 #tex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       heavy chain
                                   heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (domestic sheep) #text_change 21-Jan-2000
                               variable region sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                      138
                                                                                                                                                                                                                                                                                                                                                                                               78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
```

```
RESULT 11

S540216

Ig mu heavy chain V region precursor - sheep (fragment)
C; Species: Ovis orientalls aries, Ovis ammon aries (domest
C; Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_o
C; Accession: S54026
R; Duffour, V:, Nau, F.
submitted to the EMBL Data Library, April 1995
A; Description: Sheep immunoglobulin mu heavy chain variabl
A; Reference number: S54025
A; Accession: S54026
Ig mu heavy chain V region precursor - sheep (fragment) C;Species: Ovis orientalis aries, Ovis ammon aries (dom C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #tex:C;Accession: S54241 R;Dufour, V.; Nau, F. submitted to the EMBL Data Library, April 1995 A;Rescription: Sheep immunoglobulin mu heavy chain variants A;Reference number: S54225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 1141 <DUF>
A;Residues: 1141 <DUF>
A;Residues: 1141 <DUF>
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: immunoglobulin
F;34-116/Domain: immunoglobulin homology <IMM>
                                                                                                                                       RESULT
S54241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: EMBL;Z49170; NID:g794125; PIDN:CAA89039.1; PID:g794126 C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: immunoglobulin E;34-116/Domain: immunoglobulin homology <TMM>
                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                         Дþ
                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-140 <DUF>
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                      γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 84
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                           140
                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140 S 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 S 121
                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                          20 QVQLQESGPSLVKPSQTLSLTCTVSGFSFSNNAVGWVRQAPGKTLEWVGNIWSDGSTYYN
                                                                                                                                                                                                                                                                                                                                                          1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                           SS
                                                                                                                                                                                                                                         SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     87; Conserv
                                                                                                                                                                                                                                         121
                                                                                                                                                                                                           141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                           71.1%;
71.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71.3%;
                                                                                                                                                                                                                                                                                                                                                                                                             12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 436.5; DB Pred. No. 9e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 438; DB 2;
Pred. No. 6.6e-31;
                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                             22;
                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (domestic sheep)
#text_change 23-Jul-1999
                 variable
                                                                                (domestic sheep)
#text_change 23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 140
                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                 region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               region sequence
                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                 sequence
                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                           ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
Ig mu heavy
C;Species: O
C;Date: 08-J
Ig mu heavy chain V region precursor - C;Species: Ovis orientalis aries, Ovis C;Date: 08-Jul-1995 #sequence_revision C;Accession: S54231 R;Dufour, V.; Nau, F. submitted to the EMBL Data Library, Apr A;Description: Sheep immunoglobulin mu
                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                            ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:Z49171; NID:g794133; PIDN:CAA89040.1; PID:g794134 C;Superfamily: immunoglobulin v region; immunoglobulin homology C;Keywords: immunoglobulin C;Keywords: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: A; Accession: S54246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           submitted to the EMBL Data Library, A;Description: Sheep immunoglobulin A;Reference number: S54225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Accession: S54246 R; Dufour, V.; Nau, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:249177; NID:9794122; PIDN:CAA89046.1; PID:9794123 C;Superfamily: immunoglobulin V region; immunoglobulin homology C;Keywords: immunoglobulin C;Keywords: immunoglobulin homology <IMM>
                                                                                                            S54231
                                                                                                                                                                           Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 1-138 <DUF>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-142 < DUF>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: S54241
A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g mu heavy chain V region precursor;
Species: Ovis orientalis aries, Ovis;
Date: 08-Jul-1995 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                        118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 137 LITVSS 142
                                                                                                                                                                           135 TVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           116 LLTVSS
                                                                                                                                                                                                                                    80 PAFQSRLSITRDTSKSQVSLSLSSVTTDDTAVYYCT----
                                                                                                                                                                                                                                                                 61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYG---LDYWSPGLLL 117
                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13
                                                                                                                            14
                                                                                                                                                                                                                                                                                                              1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QVRLQESGPSLVKPSQTLSLTCTVSGFSLTSYGVAWVRQAPGKALEWLGGIWRDGKTNYD
                                                                                                                                                                                                                                                                                                                                                              ; 68
                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                    immunoglobulin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71.0%;
                                                                                                                                                                                                                                                                                                                                                                           70.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 436; DB 2
Pred. No. 1e-30;
                                                                                                                                                                                                                                                                                                                                                                         Score 435; DB 2;
Pred. No. 1.2e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           April 199
mu heavy
 April 1995
mu heavy chain
                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                           sheep (fragment)
ammon aries (dom
03-Aug-1995 #tex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sheep (fragment)
ammon aries (domestic
03-Aug-1995 #text_char
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                    -EIAYYGKFEIYSWGPGLLV
                                                           (domestic she
#text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #text_change
   variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 142;
                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           region
                                                           sheep)
nge 23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                           8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence
                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                      134
                                                                                                                                                                                                                                                                                                79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                           ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
```

region

sequence

```
Ig mu heavy chain V region precursor - sheep (fragment)
C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Date: OB-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 23-Jul-1999
C;Accession: S54244
R;Dufour, V.; Nau, F.
Submitted to the EMBL Data Library, April 1995
A;Description: Sheep immunoglobulin mu heavy chain variable region sequence.
A;Reference number: S54225
A;Reference number: S54244
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-144 <DUF>
A;Cross-references: EMBL:Z49173; NID:g794129; PIDN:CAA89042.1; PID:g794130
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Reference number: $54225
A;Accession: $54231
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-139 <DUF>
A;Cross-references: EMBL:Z49167; NID:g794101; PIDN:CAA89036.1; PID:g794102
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: immunoglobulin
F;34-116/Domain: immunoglobulin homology <IMM>
                                                                                                                                δÃ
                                                                                                                                                            . 문
                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
Search completed: August 12, Job time: 36 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 84
                                                                                                                                                                                                                                                                                                                         Query Match 70.4%; Score 432; DB 2; Length 144; Best Local Similarity 70.6%; Pred. No. 2.2e-30; Matches 89; Conservative 11; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139 S 139
                                                                                              139
                                                                                                                                  116 LLTVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 S 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   y Match 70.8%; Score 434.5; DB 2; Local Similarity 69.4%; Pred. No. 1.3e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20 QVRLQESGPSLVKPSQTLSLTCTVSEFSLTTYGVGWVRQAPGKALEWLSYIYNNGDTDYN 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84; Conservative
                  2002, 09:23:26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 139;
                                                                                                                                                                                                                                                                                                                             6;
                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                             2
```

THIS PAGE BLANK (USPTO)

4

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
  on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB DB
  320.5
311.5
311.5
311.3
313.3
303.3
294.5
290.5
284.5
284.5
284.5
284.5
284.5
284.5
279.5
279.5
279.5
279.5
277.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
274.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             368
338
336
334.5
331.5
327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length:
length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 %
Query
Match
US-09-786-015-2
614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    August 12, 2002, 09:22:50; Search time 15.82 Seconds (without alignments) 296.148 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              105224 seqs, 38719550 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QVQLQESGPSLVKPSQTLSL.....DSVPYGLDYWSPGLLLTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
  DΒ
                 HV43 MOUSE
HV45 MOUSE
HV44 MOUSE
HV44 MOUSE
HV47 MOUSE
HV47 MOUSE
HV47 MOUSE
HV47 MOUSE
HV47 HUMAN
HV62 HUMAN
HV62 HUMAN
HV62 MOUSE
HV28 HUMAN
HV62 MOUSE
HV28 HUMAN
HV62 MOUSE
HV63 HUMAN
HV64 MOUSE
HV65 RABIT
HV65 RABIT
HV65 RABIT
HV65 RABIT
HV67 MOUSE
HV18 RABIT
HV67 MOUSE
HV18 RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Π
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105224
             P01819 mus p01821 mus p01821 mus p01821 mus p01823 mus p01823 mus p01823 mus p01824 homc p18532 mus p01824 homc p18532 mus p01824 homc p1815 homc p1815 homc p1816 homc p1817 homc p01817 homc p01817 mus p01817 mus p01819 hom p01818 hom p01818 hom p01828 ory p01818 hom p01828 ory p01818 hom p0188 hom p0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                           mus musculu
homo sapien
venopus lae
homo sapien
venopus lae
homo sapien
                                                         mus musculu
oryctolagus
homo sapien
                 mus musculu
rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       musculu
```

Qy Qy

1 20

Query Match 59.9%; Score 368; DB 1; Best Local Similarity 61.1%; Pred. No. 3.9e-30; Matches 77; Conservative 16; Mismatches 27;

Length 144; Indels

6; Gaps

ω --

밁

EMBL; J00491; AAA381 EMBL; V00768; CAA241 PIR; A02094; GZMS14. InterPro; IPR003006; InterPro; IPR003596; Pfam; PF00047; 1g; 1 SMART; SM00406; IGV; Immunoglobulin V reg SIGNAL 20 1 NON_TER 144 AA; SEQUENCE 144 AA;	UENCE FROM N.A. LINE-81012133; PubMed-6774258; ano H., Maki R., Kurosawa Y., Roeder W., Tonegawa S.; o types of somatic recombination are necessary for the generation complete immunoglobulin heavy-chain genes."; ure 286:676-683(1980). MISCELLANEOUS: THE SEQUENCE SHOWN IS TRANSLATED FROM A DIFFERENTIATED GENE ISOLATED FROM A MYELOMA THAT SECRETES IGG2B. SINISS-PROT entry is copyright. It is produced through a collabo ween the Swiss Institute of Bioinformatics and the EMBL outsta European Bioinformatics Institute. There are no restrictions o by non-profit institutions as long as its content is in nifited and this statement is not removed. Usage by and for committee requires a license agreement (See http://www.isb-sib.ch/annsend an email to license@isb-sib.ch).	43_	34 268.5 43.7 119 1 HY37_MOUSE 35 268 43.6 117 1 HY41_MOUSE 36 268 43.6 119 1 HY3L_HUMAN 36 268 43.6 119 1 HY3L_HUMAN 37 267.5 43.6 114 1 HV2A_RABIT 38 267.5 43.6 118 1 HY3L_MOUSE 39 267.5 43.6 119 1 HY3B_MOUSE 40 266.5 43.4 117 1 HY3C_HUMAN 41 266 43.3 117 1 HY3C_HUMAN 42 266 43.3 117 1 HY42_MOUSE 43 265 43.2 117 1 HY42_MOUSE 44 265 43.2 117 1 HY42_MOUSE 45 264.5 43.1 120 1 HY3B_MOUSE 46 264.5 43.1 120 1 HY3B_MOUSE 47 265 43.1 120 1 HY3B_MOUSE 48 265 43.2 118 1 HY42_MOUSE 49 265 43.2 118 1 HY42_MOUSE 40 265 43.1 120 1 HY48_MOUSE 41 265 43.1 120 1 HY48_MOUSE 42 266 43.1 120 1 HY48_MOUSE 43 265 43.1 120 1 HY48_MOUSE 44 265 43.1 120 1 HY48_MOUSE 45 264.5 43.1 120 1 HY50_MOUSE 46 264.5 43.1 120 1 HY50_MOUSE 47 264.5 43.1 120 1 HY50_MOUSE 48 264.5 43.1 120 1 HY50_MOUSE 49 264.5 43.1 120 1 HY50_MOUSE 40 264.5 43.1 120 1 HY50_MOUSE 40 264.5 43.1 120 1 HY50_MOUSE 40 264.5 43.1 120 1 HY50_MOUSE 41 264.5 43.1 120 1 HY50_MOUSE
--	---	-----	---

Ş

116

LLTVSS

121

```
RESULT 2
HV46_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                          EMBL; M27638; AAA61337.1; -.
EMBL; X07880; CAA30727.1; -.
PIR; PL0102; AVMS35.
InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; ig; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region; Sign:
SIGNAL
                                                                                                                                                                                                                                                                                                                      Unpublished results, cited by:
Unpublished results, cited by:
Padlan E.A., Davies D.R., Pecht I., Givol D., Wright C.,
Padlan E.A., Davies D.R., Pecht I., Givol D., Wright C.,
Padlan E.A., Tark Symp. Quant. Biol. 41:627-637,1977)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-JUL-1986 (Rel.
01-AUG-1992 (Rel.
16-OCT-2001 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HV46_MOUSE
P01822;
                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-74170779; PubMed-4524622;
Francis S.H., Leslie R.G.Q., Hood L., Eisen H.N.;
"Amino-acid sequence of the variable region of the heavy (alpha)
chain of a mouse myeloma protein with anti-hapten activity.";
Proc. Natl. Acad. Sci. U.S.A. 71:1123-1127(1974).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jilka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                         Hood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-79148758; PubMed=428562; Schechter I., Wolf O., Zemell R., Burstein Y.; Schructure and function of immunoglobulin genes Fed. Proc. 38:1839-1845(1979).
                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-77244979;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 19-136.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 1-21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=78094475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1-31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rinfret A., Horne C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE-89238351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                       REVISION TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Jilka R.L., Pestka S.;
"Amino acid sequence of the precursor region of MOPC-315
"mmunoglobulin heavy chain.";
Proc. Natl. Acad. Sci. U.S.A. 74:5692-5696(1977).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Cloning, sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         heavy chain V region
                                                                                                                                                                                                                                                                                           d Spring Harb. Symp. Quant. Biol. 41:627-637(1977).
MISCELLANEOUS: THIS ALPHA CHAIN WAS ISOLATED FROM A MYELOMA
PROTEIN THAT HAS ANTI-DINITROPHENYL ACTIVITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Immunol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               segment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SVTVSS
                                                                                                                                                                                                                                                                                                                                                                       Margolies M.N., Givol D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               144
 19
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26:431-434(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                      PubMed=268248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PubMed=414225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=2497341;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dorrington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOPC 315 precu
                                           Signal.
IG HEAVY CHAIN V FRAMEWORK-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           K.J.,
ion of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            precursor.
                                                                                                                                                                                                                                                                                                                                                                         Zakut R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Klein
the re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rearranged MOPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Σ
::
             REGION MOPC 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and precursors.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٧Н
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
    DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HV45_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID CONFLICT CONFLICT CONFLICT CONFLICT CONFLICT CONFLICT NON_TER
   CHAIN
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
DOMAIN
                                                                                                                                       use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires = 14-2---
                                                                                                                                                                                                                                                                                                Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
                                                                                                                          entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                           21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence up
15-JUL-1999 (Rel. 38, Last annotation
                                                                                                                                                                                                                                                                                                                                                               P01821;
21-JUL-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                               Pfam; PF00047; ig; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region;
SIGNAL 1 19
                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                            MEDLINE-82075900; PubMed-6273429;
Kataoka T., Nikaido T., Miyata T., Moriwaki K., Honjo T.;
"The nucleotide sequences of rearranged and germline immunoglobulin
VH genes of a mouse myeloma MC101 and evolution of VH genes in
                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. MEDLINE=82075900;
                                                                                                                                                                                                           J. Biol.
                                                                                                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                    Ιg
                                                                                              PIR; A02096; G1MS10
                                                                                                       EMBL; J00502;
                                                                           [nterPro;
                                                                                   [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                     136
                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
nes 72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 VQLQESGPSLVKPSQTLSLTCTVSGFSLTK-YGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                 heavy chain V region MC101 precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                     ss-
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VQLQESGPGLVKPSQSLSLTCSVTGYSITSGYFWNWIRQFPGNKLEWLGFIKYDGSNGYN
                                                                                                                                                                                                                                                                                                                                                                                                                                     137
                                                                                                                                                                                                          Chem.
                                                                         IPR003596;
                                                                                  IPR003006; Ig_MHC
20
116
116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49
55
69
85
117
127
40
15
15
17
102
123
123
137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                        AAA38515.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
    ĀΑ;
                                                                                                                                                                                                          257:277-285(1982).
                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
   116
116
12593 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      54
68
116
126
137
114
15
78
102
137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   57.2%;
59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15399
                                                                         Ig_v.
                                            Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G -> H (IN REF. 2).
GY -> YG (IN REF. 4).
N -> D (IN REF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BY SIMILARITY.
G -> GG (IN REF.
G -> H (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 351; DB 1;
Pred. No. 1.9e-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPLEMENTARITY-DETERMINING-1. FRAMEWORK-2. COMPLEMENTARITY-DETERMINING-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPLEMENTARITY-DETERMINING-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MISSING (IN REF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FRAMEWORK - 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FRAMEWORK - 3
                        IG
                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FB3828304C2B81DC CRC64;
    8079A6EE7C552B3E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                        HEAVY CHAIN V
                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                   116
                                                                                                                                                                                                                                                                                                                                                                                   ĄΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            · 2).
4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27;
                        REGION MC101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1; CAA30727).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6,
                                                                                                                                                                                     collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                n no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                                                                                    on
                                                                                                                                                                   its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ψ
```

P.

```
RESULT 5
HV2I_HUMAN
ID HV2I_HUMAN
AC P06331;
                                                                                                   Ş
                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                             밁
                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match
Best Local S
                                                                                                                                                                                  Matches
                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of co
                                                                                                                                                                                                                                                                                                                                                                EMBL; V00767; CAA24148.1; -. PIR; A02095; HVMS14.
                                                                                                                                                                                                                                                                                                                                                                                                             modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or good as complete the license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE-81012133; PubMed-6774258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus (Mouse)
Eukaryota; Metazoa; (
Mammalia; Eutheria; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Ig heavy chain V region PJ14 precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HV44_MOUSE
P01820;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOUSE
                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                Pfam; PF00047; 1g; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region;
                                                                                                                                                                                                                                                                                                                                      InterPro; IPR003006; Ig_MHC. InterPro; IPR003596; Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sakano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                             98
                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                    61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCA 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kano H., Maki R., Kurosawa Y., Roeder W., Tonegawa S.; wo types of somatic recombination are necessary for the complete immunoglobulin heavy-chain genes."; ture 286:676-683(1980).
                                                                                                                                                       ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAFISRLSISKDNSKSQVFFKMNSLQSNDTAIYYCAR 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAK 97
                                                                                                                               QVQLKESGPGLVAPSQSLSITCTVSGFSLTGYGVNWVRQPPGKGLEWLGMIWGDGSTDYN
                                                                           SALKSRLSISKDNSKSQVFLKMNSLQTDDTARYYCA 115
                                                                                                                                                                                  64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63;
                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                          20
115
115
                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                 ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
              STANDARD;
                                                                                                                                                                                                                                              115
115
12447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata;
Rođentia;
                                                                                                                                                                                             54.78;
66.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                55.0%;
                                                                                                                                                                                                                                                                                                 Signal.
                                                                                                                                                                                                                                                 W.
                                                                                                                                                                               14;
                                                                                                                                                                               Score 336; DB
Pred. No. 4.9e
14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 338; DB
Pred. No. 3.1e
L5; Mismatches
                                                                                                                                                                                                                                                                         IG HEAVY CHAIN V REGION PJ14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata;
Sciurognathi; Muridae;
              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                 7569DD4A4843D500
              146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.1e-27;
                                                                                                                                                                                             DB 1;
.9e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
              ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19;
                                                                                                                                                                                  18;
                                                                                                                                                                                                       Length 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 116;
                                                                                                                                                                                                                                                CRC64;
                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  generation
                                                                                                                                                                               0;
                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                 0
```

```
HYGLUT
HY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQUENT TO THE TERM OF THE TERM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR003006; 1 InterPro; IPR003596; 1 Pfam; PF00047; 1g; 1. SMART; SM00406; IGV; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P18532;
01-NOV-1990
01-NOV-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.

MEDLIND-85205332; PubMed-3922855;

Kudo A., Ishihara T., Nishimura Y., Watanabe T.;

"A cloned human immunoglobulin heavy chain gene
repeat sequence in 5' flanking region.";

Gene 33:181-189(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JAN-1988 (Rel. 06, Created)
01-JAN-1988 (Rel. 06, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
1g heavy chain V-II region ARH-77 precursor.
Homo sapiens (Human).
Eukaryota, Metazooa; Chordata; Craniata; Verte
Mammalia; Eutheria; Primates; Catarrhini; Hom
                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                              MEDLINE-89279149; PubMed-2499654;
                                                                                                                                                                                                                                                                                 STRAIN-BALB/CJ;
                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIR; A02101; G1HUH2.
HSSP; P01825; 7FAB.
                                                                                                                                                                                 Levy N.S., Malipiero U.V., Lebecque
"Early onset of somatic mutation in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HV61_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-JUL-1999 (Rel. 38, Last ar
Ig heavy chain V region 1B43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [mmunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116 LLTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141 TVTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSV-----NGDSVPYGLDYWSPGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QVQLQQWGAGLVKPSETLSLTCAVFGGSFSGYYWSWIRQPPGRGLEWIGEINHSGSTNYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TSLKSRVTISLDTSKNLFSLKLSSVTAADTAVYYCARGLLRGGWNDVDYYYGMDVWGQGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146
146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Rel. 16, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         V region;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16, Last sequence up 38, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          146
117
127
127
146
115
                                                                                                                                                                                                                                                                                                                                                                                                   Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ig_MHC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IG HEAVY CHAIN V SEGMENT.
D SEGMENT.
J SEGMENT.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 334.5; DB 1
Pred. No. 9.2e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            precursor
                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8D7FD52BB218171F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                            BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         on update)
                                                                                                                                                                                                                    S
                                                                                                                                                                                 S.G., Gearhart immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     116
                                                                                               o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₹
                                                                                               THE VH3660 SUBFAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               V-II REGION ARH-77.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   with a novel direct-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                     Ч
                                                                                                                                                                                                                    P.J.;
                                                                                                                                                                                     genes during
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                   Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
```

B

61

PSLKSRISITRDTSKNQYYLQLNSVTSEDTATYYCT-----SLRFA--YWGQGTLVTVS

```
밁
          QΥ
                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DR FTT FTT FTT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                           Query Match
Best Local 9
                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                        MOUSE
HV47_MOUSE
P01823;
                                                                                                                                                                                                                                                                                                                                                              21-JUL-1986
21-JUL-1986
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NON_TER
SEQUENCE
                                                                                                                                                                                                                                              MEDLINE-84024551; PubMed-6414509;
Juszczak E.C., Margolies M.N.;
"Amino acid sequence of the heavy chain
mouse anti-arsonate monoclonal antibody
                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                    Pfam; PF00047; ig; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region; Antiarsonate antibody.
NON_TER 113 113
                                                                                                                                                             InterPro; IPR003006;
InterPro; IPR003596;
                                                                                                                                                                                PIR;
                                                                                                                                                                                                                              Biochemistry 22:4291-4296(1983)
                                                                                                                                                                                                                                                                                      STRAIN-A/J;
                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIGNAL
                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                     ÷
                                                                                                                                                                                                                                     idiotype.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Immunoglobulin
           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                 -JUL-1986 (Rel. 01, Created)
-JUL-1986 (Rel. 01, Last sequence up
-JUL-1999 (Rel. 38, Last annotation
heavy chain V region 36-60.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 VQLQESGPSLVKPSQTLSLTCTVSGFSLTK-YGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                               MISCELLANEOUS: THIS CHAIN WAS ISOLATED FROM AN ANTIARSONATE MONOCLONAL ANTIBODY OF THE IGG2A SUBCLASS. IT REPRESENTS A INDICTYPE FAMILY CHARACTERISTIC OF THE ANTIARSONATE RESPONSE
                                                                                                                                                                                        STRAIN A/J MICE.
                                     TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAK
                          EVQLQESGPSLVKPSQTLSLTCSVTGDSITSDYWNWIRKFPGNKLEHMGYISYSGSTYYN
                                                                                                                                                                                A02098; G2MS60.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PF00047;
                                                                                                                                                                                                                                                                                                                                                                                                                                               PSLKSRISITRDTSKNOFFLOLNSVTTEDTATYYCAR 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VQLQESGPDLVKPSQSLSLTCTVTGYSITSGYSWHWIRQFPGNKLEWMGYIHYSGNTSYN
                                                                  67;
                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                113 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1
19
19
54
54
68
68
85
116
                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ig;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <
                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7 region;
18
116
48
53
67
84
116
114
                                                                                                                                                           Ig_MHC.
                                                                                                                12734 MW;
                                                                           53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MW;
                                                                 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15;
                                                                Score 327; DB
Pred. No. 3.8e
21; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPLEMENTARITY-DETERMINING-2. FRAMEWORK-3.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FRAMEWORK-1.
COMPLEMENTARITY-DETERMINING-1.
FRAMEWORK-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IG
                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                               38DC0E0E3F5075B7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1CB547253681FF74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HEAVY CHAIN V REGION 1B43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        331.5; L.
No. 1.4e-26;
18
                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                  113
                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                              variable region
36-60 bearing a
                                                                DB 1; 1
3.8e-26;
1es 25;
                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18;
                                                                                                              CRC64;
                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                               from the minor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          116;
                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                        Mus
                                                                                                                                                                                                          SECOND
                                                               Gaps
                                                                                                                                                                                                 OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                           60
                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
```

```
Qy
                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                              HV2G_HUMAN
                                                                                                                              RESULT
                                                                                                                                                         DЬ
                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HV60_MOUSE
                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                     21-JUL-1986
21-JUL-1986
15-JUL-1999
                                                                                                                                                                                                                                                                            DISULFID NON_TER SEQUENCE
                                                                                                                                                                                                                                                                                                                                                      SIGNAL
                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
MEDLINE=77242302; PubMed=407927;
        SEQUENCE
                         NCBI_TaxID=9606;
                                                    Homo sapiens
                                                                                                 P01825;
                                                                                                            HV2G_HUMAN
                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00047; ig; SMART; SM00406; IGV
                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR003006; InterPro; IPR003596;
                                                                                                                                                                                                                                                                                                                                                                                                                 J. Exp. Med. 169:2007-2019(1989).
PIR; JT0509; HVMS31.
                                                                                                                                                                                                                                                                                                                                                                                                                                           "Early onset of somatic mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=89279149; PubMed=2499654;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. STRAIN=BALB/CJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HV60_MOUSE P18531;
                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                     the primary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1990
                                                                                                                                                                                                                                                                                                                                                                      Immunoglobulin V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       I5-JUL-1999 (Rel. 38, La
Ig heavy chain V region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                          -JUL-1986 (Rel. 01, Created)
-JUL-1986 (Rel. 01, Last seg
-JUL-1999 (Rel. 38, Last ann
heavy chain V-II region NEW
                                                                                                                                                         08
                                                                                                                                                                          61
                                                                                                                                                                                           20
                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                  TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAK 97
                                                                                                                                                                                                    VQLQESGPSLVKPSQTLSLTCTVSGFSLTK-YGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                       PSLKNRISITRDTSKNQFFLKLNSVTTEDTATYYCAR 116
                                                                                                                                                                                          VQLQESGPGLVKPSQSLSLTCSVTGYSITSGYYWNWIRQFPGNKLEWMGYISYDGSNNYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113
                                                                                                                                                                                                                                                                           116
116
                                                                                                                                                                                                                                                                                                                                                                                                                                    immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Rel.
                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Rel. 16, Created)
                                                    (Human)
                                                                                                                                                                                                                                                                             AA,
                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                              7 region;
18
116
48
53
67
84
116
                                                                                                                                                                                                                                                                                                                                                                                 IGV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16, Last sequence update)
38, Last annotation updat
cegion M315 precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                    response
                                 Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata;
                                                                                                                                                                                                                                                                             13095
                                                                                                                                                                                                                                        52.2%;
                                                                                                                                                                                                                                                                                                                                                                                                Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                          Ig_MHC.
                                                                                                                                                                                                                                                                                                                                                                      Signal
                                                                                                                                                                                                                                                                             ¥.
                                                             annotation NEWM.
                                                                               sequence
                                                                                                                                                                                                                               17;
                                                                                                                                                                                                                                                                                             IG HEAVY CHAIN V REGION M315. FRAMEWORK-1.
COMPLEMENTARITY-DETERMINING-1.
FRAMEWORK-2.
COMPLEMENTARITY-DETERMINING-2.
FRAMEWORK 3.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lebecque
                                                                                                                                                                                                                                       Score 320.5;
Pred. No. 1.
                                  Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi;
                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                             4562E03E53DC9E10
                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                             in
                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                            immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                          117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    116
                                                                                                                                                                                                                                                                                                                                                                                                                                                       .G.,
                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                              l.8e-25;
nes 18;
                                                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gearhart
                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                1.
                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                Length 116;
                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                            VH genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                       P.J.;
                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                             during
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus
                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                            60
                                                                                                                                                                                                                               ۲
```

t

```
RESULT
HV02_XE
ID V2
AC P2
DT 01
DT 01
DT 11
DT 15
CC E1
CC E1
CC AT
                                                                                                                                                                                В
                                                                                                                밁
                                                                                                                              δÃ
                                                                                                                                                В
                                                                                                                                                              ş
                                                                                                                                                                                              Ŷ
                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 65
     HV02_XENLA STANDARD; PRT; 135 AA.
P20957;
01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
15 heavy chain V region XIG14 precursor (Fragment).
Xenopus laevis (African clawed frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                                                                                                                        HELIX
STRAND
STRAND
STRAND
                                                                                                                                                                                                                                                                                                       TURN
STRAND
TURN
STRAND
                                                                                                                                                                                                                                                                                                                                                                      TURN
STRAND
TURN
STRAND
TURN
                                                                                                                                                                                                                                                        NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                       STRAND
HELIX
                                                                                                                                                                                                                                                                                                                                                                                                              STRAND
STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIR;
                                                                                 XENLA
                                                                                                                                                                                                                                                                                                                                                        TURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J. Biol.
                                                                                                                                                                                                                                                                                                                                                               STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Preliminary refinement and structural from human immunoglobulin new at 2.0-A J. Biol. Chem. 253:585-597(1978).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-78066916; PubMed-618887;
Saul F.A., Amzel L.M., Poljak R.J.;
 Xenopodinae;
                                                                                                                                                                                                                                                                                                                                                                                                                               MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biochemistry 16:3412-3420(1977).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Amino acid sequence of the immunoglobulin (IgG New).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Poljak R.J.,
"Amino acid s
                                                                                                                                                                                                                                                                                                                                                                                                                                      Tmmunog Lobu In
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                 117
                                                                                                                                121
                                                                                                                                                61
                                                                                                                                                                 61
                                                                                         10
                                                                                                                                                                                 ب
                                                                                                                                                                                                 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MISCELLANEOUS:
                                                                                                                                                                                        QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                S
                                                                                                                                S 121
                                                                                                                                                TPLRSRVTMLVDTSKNQFSLRLSSVTAADTAVYYCARNL----IAGCIDVWGQGSLVTVS
                                                                                                                                                          TALQSRLSYTRDTSKSQFSLSLSSYTTEDTAIYYCAKSYNGDSVPYGLDYWSPGLLLTVS
                                                                                                                                                                               QVQLEQSGPGLVRPSQTLSLTCTVSGSTFSNDYYTWVRQPPGRGLEWIGYVFYHGTSDDT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A02100; G1HUNM.
                                                                                                                                                                                                                                                                                                                                                                                                                                              PF00047; 1g; ; SM00406; IG
                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                             B; 31-JAN-94.
; IPR003006; ]
; IPR003596; ]
                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                          Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nakashima Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                    V region; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                IGV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THIS
                                                                                                                                                                                                                                                                 12790 MW;
                                                                                                                                                                                                                       51.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                               1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN WAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chen B.L., Konigsberg
e VH region of a human
                                                                                                                                                                                                                21;
                                                                                                                                                                                                                       Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                               PYRROLIDONE CARBOXYLIC
                                                                                                                                                                                                                                                        2DA47B509562D237 CRC64;
                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ISOLATED
                                                                                                                                                                                                                       318;
No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     analysis of the
resolution.";
                                                                                                                                                                                                                       DB 1;
.2e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FROM
                                                                                                                                                                                                                ω
1.
                                                                                                                                                                                                                               Length 117;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W.;
myeloma
                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IGG1
                                                                                                                                                                                                                                                                                                                                                                                                                               ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fab fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MYELOMA
                                                                                                                                                                                                               4;
                                                                                                                                                                                                               Gaps
                                                                                                                                                116
                                                                                                                                                                               60
                                                                                                                                                                                               60
                                                                                                                                                               120
                                                                                                                                                                                                               1;
```

```
₽
HV2F_HUMAN
                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Immunoglobulin V
NON_TER 1
SIGNAL <1
CHAIN 19
NON_TER 135
                                                                                                                                                                                                                                                                          HV2F_HUMAN
P01824;
21-JUL-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a cobetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entitles requires a license agreement (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE-88176921; PubMed-2451244;
Schwager J., Mikoryak C.A., Steiner L.A.;
Schwager J., mikoryak C.A., Steiner from "Amino acid sequence of heavy chain from "Amino acid sequence of heavy chain from "
        GlycoSuiteDB; P01824; -...
InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; ig; 1.
                                                                                                                           MEDLINE=8222233; PubMed=6806818; Takahashi N., Tetaert D., Debuire B., "Complete amino acid sequence of the
                                                                                                                                                                                                                                                  21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last seq
15-JUL-1999 (Rel. 38, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR; B31933; B31933.
InterPro; IPR003006;
                                                         PIR; A02099; D2HUWA.
HSSP; P01825; 7FAB.
                                                                                                                                                                                                     Eukaryota;
Mammalia; F
                                                                                                                                                                                                                            Ig heavy chain V-II region Homo sapiens (Human).
                                                                                                     immunoglobulin D.";
Proc. Natl. Acad. S
                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; J03632; AAA49791.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proc. Natl. Acad. Sci. U.S.A. 85:2245-2249(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from cDNA sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=8355;
                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                     64
                                                                                                                                                                                                                                                                                                                                                                                                             21
                                                                                                                                                                                                                                                                                                                                                                                                                                    4
                                                                                            MISCELLANEOUS:
                                                                                                                                                                                                                                                                                                                                                                                                                        LQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYNTAL 63
                                                                                                                                                                                                                                                                                                                                                            KNRVTITKDNGKKQVYLQMNGMEVKDTAMYYCAREY---ASGYNFDYWGQGTMVTVTS
                                                                                                                                                                                                                                                                                                                                                                                     QSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                           LQESGPGTVKPSESLRLTCTVSGFELSSYHMHWIRQPPGKGLEWIGVIATGGSTAIADSL 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PF00047; ig; 1.; SM00406; IGv;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                    Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1
<1
19
135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR003596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             V region; Signal
                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                            Sci. U.S.A. : THIS CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18
135
135
                                                                                                                                                                                                     Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 implications for evolution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51.4%;
47.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15080 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ig_MHC.
                                                                                                                                                                                                                                        t sequence up t annotation WAH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 315.5; DB 1
Pred. No. 6.7e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                            79:2850-2854(1982)
WAS ISOLATED FROM
                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EBC467105C00732E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HEAVY CHAIN V REGION XIG14.
                                                                                                                                                                                                                                                  update)
on update)
                                                                                                                              , Lin L
delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from Xenopus laevis IgM deduced
                                                                                                                                                                                                                                                                                                   129
                                                                                                                                                                                                                                                                                                   Ą
                                                                                                                              L.-C.,
a heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
                                                                                                                                          င်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of immunoglobulin
                                                                                            AN
                                                                                                                              Putnam
chain o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                            IGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        restrictions
                                                                                                                             of.
                                                                                             MYELOMA
                                                                                                                               human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
```

1;

```
RESULT 13
HV2C_HUMAN
ID HV2C_H
AC P01816
DT 21-JUL
                                                                                                                멇
                                                                                                                                           δÃ
                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOF
                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Immunoglobulin 1
NON_TER 129
SEQUENCE 129 /
 HV2C_HUMAN
P01816;
21-JUL-1986
                                                                                                                                                                                                                                                                                                                        DISULFID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HV62_MOUSE STANDARD; PRT; 117 AA P18533; 01-NOV-1990 (Rel. 16, Created) 01-NOV-1990 (Rel. 16, Last sequence update) 15-JUL-1999 (Rel. 38, Last annotation updat 19 heavy chain V region 733 precursor.
                                                                                                                                                                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00047; ig; 1.
SMART; SM00406; IGV; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Exp. Med. 169:2007-2019(1989).
PIR; JT0510; HVMS73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Levy N.S., Malipiero U.V., Lebecque "Early onset of somatic mutation in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-BALB/CJ;
MEDLINE=89279149; PubMed=2499654;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                     Immunoglobulin V region;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110
                                                                                                                80
                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              59
                                                                                                                                                                             20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               primary immune response."
                                                                                                                               NTALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAK
                                                                                                                                                                                           VQLQESGPSLVKPSQTLSLTCTVSGFSLT--KYGVSWVRQAPGKALEWLGGVSSGALTAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QVQLQESGPSLVKPSQTLSLTCTVSGFSL--TKYGVSWVRQAPGKALEWLGGVSSGALTA 58
                                                                                                             NPSPKSRTTITRDTSKNQFFLEMNSLTAEDTATYYCAR
                                                                                                                                                                            VQLQESGPGLVKPSQSIALTCTVTGISITTGNYRWSWIRQFPGNKLEWIGYIYYSAITSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YWSPGLLLTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YNPSLRGRYTISVDTSRNQFSLNLRSMSAADTAMYYCAR---GNPPPYYDIGTGSDDGID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VWGQGTTVHVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YNTALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPY------GLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RLQLQESGPGLVKPSETLSLTCIVSGGPIRRTGYYWGWIRQPPGKGLEWIGGVYYTGSIY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR003006; Ig_MHC.
IPR003596; Ig_v.
                                                                                                                                                                                                                                                                                                                   1
19
40
117
117
 (Rel. 01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     V region.
                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                      18
117
115
115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14117
                                                                                                                                                                                                                                                                                                                        13223 MW;
                                                                                                                                                                                                                                                        50.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51.1%;
49.2%;
   Created)
                                                                                                                                                                                                                                                                                                                                                                                                     Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ¥.
                                                                                                                                                                                                                                         19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22;
                                                                                                                                                                                                                                       Score 311; DB
Pred. No. 1.6e
19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                        ΙG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                               PRT;
                                                                                                                                                                                                                                                                                                                       1595517827F976BE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D5D53D47ABE51319
                                                                                                                                                                                                                                                                                                                                                     HEAVY CHAIN V
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S.G., Gearhart immunoglobulin
                                 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9e-25;
                                                                                                                                                                                                                                                        DB 1;
.6e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                               AA.
                                                                                                              117
                                                                                                                                            97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                           19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31;
                                                                                                                                                                                                                                                                                                                                                                     REGION
                                                                                                                                                                                                                                                                     Length 117;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Р.J.;
VH ge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14;
                                                                                                                                                                                                                                         ν.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus
                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                         59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
··
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
FFT CORRESPONDED TO THE FFT THE PROPERTY OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
```

ń

```
RESULT 14
HV2B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                 P01815;
21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence up
15-JUL-1999 (Rel. 38, Last annotation
InterPro; IPR003006; Ig_MHC.
InterPro; IPR003006; Ig_v.
Pfam; PF00047; ig; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region; Glycoprotein.
PYRROLIDONE CARBOXYLIC ACID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-JUL-1986 (Rel. 01, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Ig heavy chain V-II region DAW.
Homo sapiens (Human).
                                                                                                                                                      Biochem. J. 117:641-660(1970)
                                                                                                                                                                               Press E.M., Hogg N.M.;
The amino acid sequences of the
                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                        Ig heavy chain V-II region Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                HV2B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00047; ig; 1.
SMART; SM00406; IGv; 1.
                                                                                                                                                                   heavy chains.
                                                                                                                                                                                                                MEDLINE=70258837; PubMed=5449120
                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochem. J. 117:641-660(1970).
-!- MISCELLANEOUS: THIS CHAIN WAS OBTAINED FROM IGG1 ISOLATED FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   heavy chains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Press E.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=70258837; PubMed=5449120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
                                                                                                                                      ·!- MISCELLANEOUS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SERUM OF A PATIENT WITH HYPERGAMMAGLOBULINEMIA.; A02091; G1HUDW.
siPro; IPR003906; Ig_MHC.
rPro; IPR003596; Ig_V.
                                                                                                                         PROTEIN.
                                                                                                      А02089; G1HUCO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YNTALQSRLSYTRDTSKSQFSLSLSSYTTEDTAIYYCAKSYNGDSYPYGLDYWSPGLLLT 118
| :|::||:|::|| ||:|:| || || ||:|:|
YGASLETRLAYSKDTSKNQVYLSMNTVGPGDTATYYCARSCGSQY----FDYWGQGTLYT 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QVQLQESGPSLVKPSQTLSLTCTVSGFSLT--KYGVSWVRQAPGKALEWLGGVSSGALTA 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QVTLRESGPALVRPTQTLTLTCTFSGFSLSGETMCVAWIRQPPGEALEWLAWDILNDDKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequences of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z.X.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119
; 13045 MW;
                                                                                                                                      THIS
                                                                                                                                                                                                                                                                         Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49.38;
51.28;
                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PYRROLIDONE CARBOXYLIC
                                                                                                                                      WAS
                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4E13E00214BAD789 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                    Fd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fd
                                                                                                                                      ISOLATED FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         303;
                                                                                                                                                                                                                                                                                                                                    e update)
lon update)
                                                                                                                                                                                  fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fragments
                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of.
                                                                                                                                                                                  0f
                                                                                                                                      AN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   two
                                                                                                                                                                                    two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                      IGG1
                                                                                                                                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACID
                                                                                                                                                                                  human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human
                                                                                                                                      MYELOMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gamma-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
```

N-LINKED (GLCNAC. . .).

.

```
RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뭕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SO
                                        Query Match
Best Local S
Matches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
NON_TER
SEQUENCE
                                                                                                          NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                       entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                     use by non-profit institute. There are no rest modified and this statement is not removed. Usage by an or send an armonic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HVO1_XENLA STANDARD; PRT; 136 AA.
P20956;
01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
15-JUL-1999 (Rel. 38, Last annotation update)
15 heavy Chain V region XIGB precursor (Fragment).
Xenopus laevis (African Clawed frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibla; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                        pfam; pF00047; ig; 1.
SMART; SM00406; IGv; 1.
Immunoglobulin V region; Signal.
                                                                                                                                                                                                                                            EMBL; M20484; AAA49774.1; ALT_TERM. PIR; A31933; A31933. HSSP; P01789; 1MCP.
                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between the Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                   Schwager J., Mikoryak C.A., Steiner L.A.; ramino acid sequence of heavy chain from Xenopus laevis IgM deduced from CDNA sequence: implications for evolution of immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. MEDLINE-88176921; PubMed-2451244;
                                                                                                                                     CHAIN
                                                                                                                                                                                                                InterPro; IPR003006; Ig_MHC
InterPro; IPR003596; Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                           Proc. Natl. Acad. Sci. U.S.A. 85:2245-2249(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                        domains
                                                                                                                                                                  NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xenopodinae; Xenopus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID-8355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117 TVSS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _
4 LQESGPSLYKPSQTLSLTCTYSGFSLTKYGYSWYRQAPGKALEWLGGYSSGALTAYNTAL 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYG--VSWVRQAPGKALEWLGGVSSGALTA 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NTSLETRLTISKDTSRNQVVLTMDFV---DTATYYCAR-ITVIPAPAGYMDVWGRGTPV 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YNTALQSRLSYTRDTSKSQFSLSLSSYTTEDTAIYYCAKSVNGDSVPYG-LDYWSPGLLL 117
                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
120
120 AA;
                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                   19
                                                                                                          Ã,
                                                                                                         136
136
15123 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62 N
120
13226 MW;
                                                  47.2%;
45.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48.0%;
                                          26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22; Mismatches
                                        Score 290; DB 1; Length 136; Pred. No. 2.5e-22; 6; Mismatches 36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 294.5;
Pred. No. 7.
                                                                                                                                     IG HEAVY CHAIN V REGION XIG8
                                                                                                          3141838981441963 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      158A8B29AE7EEB98 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ); DB 1;
7.5e-23;
nes 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                          18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
                                        2
                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                        1
```

```
Ş
                                                                  밁
                  64
                                                                  21
QSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLTVSS 121 ::|::|:| | | | | | ::| ::| | ::||:|
                                                                  LQESGPGTVKPSESLRLTCTVSGFELTSYYVYWIRQPPRKTLEWIGVVRTDGSTAIADSL 80
```

멍

Search completed: Job time: 59 sec August 12, 2002, 09:23:49

⁸¹ KNRVTITKONGKKQYYLQMNGMEYKDTAMYYCTSTLAGTAGYF--EHWGQGTMYTVTS 136

THIS PAGE BLANK (USPTO)

Tue

4)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                    Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPTREMBL_19:*
1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
4: sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6:
7:
8:
9:
110:
113:
113:
114:
115:
         61.8
59.7
588.9
558.5
54.5
53.7
53.6
552.6
552.6
552.7
552.7
552.7
552.7
552.7
552.7
552.7
552.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           August 12, 2002, 09:22:50; Search time 43.19 Seconds (without alignments) 484.658 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-786-015-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              562222 seqs, 172994929 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5
Copyright (c) 1993 - 2000 Com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QVQLQESGPSLVKPSQTLSL......DSVPYGLDYWSPGLLLTVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                    Length
         119
119
119
119
150
150
159
179
1121
1122
1122
1122
1122
                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                 Q91x92
Q99NG4
Q96EY0
Q9UL73
Q9UL73
                                                                                                                                                                                                                                                                                                                                                                                    ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   562222
091x92 mus | 099ng4 mus | 099ng4 mus | 095ey0 homo | 095173 homo | 095973 homo | 099m22 mus | 099m22 mus | 099m2 mus | 096x8 homo | 0956x8 homo | 094175 homo | 094by9 homo | 094by9 homo | 094by9 homo | 094by4 hom
                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                   s musculu
s musculu
sapien
sapien
sapien
sapien
sapien
sapien
```

Q9BQB8 Q99M22 Q9UL96 Q9BU10 Q96AA6 Q96KX8 Q90L75 Q9Y509

Q96BB9 Q9UL84

sapien sapien sapien sapien sapien sapien sapien sapien

δÃ В ρ В 8

В

S 137

RESULT

N

рь	Qy db	X m O	DR RAC SO	2222	S D D D D D D D D D D D D D D D D D D D	RES Q91		
6 0 51	2	Query M Best Lo Matches	SEC STIS	Man	MUN 01:	SULT 1x92 091		117 118 119 119 120 120 120 120 120 120 120 120 120 120
0	0	Match Local Simi	SEQUENCE FROM N SEQUENCE FROM N TISSUE-COLON; Strausberg R.; Strausberg R.; Submitted (JUL-2 EMBL; BC011181; SEQUENCE 482 A	D	O1-DEC-2001 O1-DEC-2001 O1-DEC-2001 ONKNOWN (PRO	1 .x92 .x92.		292 292 292 292 292 292 292 292 292 293 293
ALQSRLSVTRDTSI	QVQLQESGPSLVKPSQTLS : : QVQLKESGPDLVAPSQSLS	61.8 ilarity 59.5 Conservative	OM N.A. N; R.; JUL-2001) 181; AAH1 482 AA;	oa; ia;	2001 (TrEMBLrel2001 (TrEMBLrel2001 (TrEMBLrel2001 (TrEMBLrel2001 FOR MG (MOUSE).	PRELIMINARY		44444444444444444444444444444444444444
SKSQFSLS SKSQVFLK	SQTLS : SQSLS	61. 59. ative	to 1181 5186	Chordata; Rođentia;	0	NARY;		131 146 487 487 494 494 494 494 494 494 494 494 494 49
LKMN ::			the .1;	data ntia	19, 19, 19,			
SVTTEDTAIYYCAKS : : SLQTNDTARYYCARD	VSGFSLTKYGVSWVR : : VSGFALTSYAISWVR	Score 379.5; Pred. No. 7e-3 0; Mismatches	EMBL/GenBank/DDBJ d 3; 312E01F9C1BC7F3C	Craniata; Sciurognat	Created) Last sequend Last annotal 22).	PRT; 482 AA	ALIGNMENTS	043234 0901188 09924R8 0998A4 0998A4 0998A6 0998A6 0924P9 0924P9 0924P9 0924R0 0924R1 0924P1 0924P6
VPYGLDYWSPGLLLTVS 1 AMDYWGQGTSVTVS 1	SITCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 6 : : : : : : SITCTVSGFALTSYAISWVRQAPGKGLEWLGVIWTGGVTNYN 7	DB 11; Length 482; 11; 26; Indels 3; Gaps	BJ databases. 7F3C CRC64;	Vertebrata; Euteleostomi; hi; Muridae; Murinae; Mus.	ce update) cion update)	•		043234 homo s.
36	9 6)S 1						sapien musculu musculu musculu sapien sapien musculu

```
OPPOSE

ACT OPPOSE
                          POSENIA POSE PRA POSE POR PRA POSE PRA 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmid.
NON_TER
NON_TER
SEQUENCE
Strausberg R.;
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
Submit ed (JUL-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; BC011857; AAH11857.1; -.
SEQUENCE 613 AA; 67273 MW; 31214203FB8421E7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                       Q96EYO PRELIMINARY; PRT; 613 AA. Q96EYO, 01-DEC-2001 (TrEMBLrel. 19, Created) 01-DEC-2001 (TrEMBLrel. 19, Last sequence update) 01-DEC-2001 (TrEMBLrel. 19, Last annotation update) UNKNOWN (PROTEIN FOR MGC:20337).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hawlisch H., Frank R., Hennecke M., Bae
Bautsch W., Kola A., Klos A., Koehl J.;
"Site-Directed C3a-Receptor Antibodies
J. Immunol. 160:2947-2958(1998).
EMBL; AJ222590; CAA10890.1; -.
HSSP; P01825; JFAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2001 (TrEMBLrel. 17, 01-DEC-2001 (TrEMBLrel. 19, SINGLE CHAIN FV (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q99NG4
                                                                                                                                                       SEQUENCE FROM N.A.
TISSUE-PRIMARY B-C
                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00047; ig; 1
SMART; SM00409; IG;
SMART; SM00406; IGV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasmid pHEN1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q99NG4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=BALB/C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=98169018; PubMed=9510199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VTVSS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SALISRLSISKDNSKSQVFLKLNSLQTEDTATYYCARHYYKYAN----YAMDYWGQGTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCA----KSVNGDSVPYGLDYWSPGLL 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SM00410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
75; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; IPR003599; Ig.
; IPR003600; Ig_like.
; IPR003006; Ig_MHC.
; IPR003596; Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                          B-CELLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IG_like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
13255 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                   Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59.7%;
                                                                                                                                                       FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                          TONSILS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                               Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D293E4EBC8C59D5B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   366.5;
No. 2.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Baensch
J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from
                                                                                                                                                                                                                                                                                                                    Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .7e-30;
ies 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                      Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Phage Display Libraries.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sohns
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                      HOMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
```

```
RESULT
095973
ID 00
AC 00
DT 00
DT 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT PRESULT PRESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                             γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                             밁
                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                      Matches
095973;
095973;
01-MAY-1999
01-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (FRAGMENT).

Homo sapiens (Human).

Homo sapiens (Human).

Theritaryota; Metazoa; Chordata; (Metazoa; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9UL73;
01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; I
SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
MEDLINE=98277139; PubMed=9614934;
Wu X., Liu B., Van der Merwe P.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MYOSIN-REACTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9UL73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fetus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Myosin-reactive autoantibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     116
                                                                                                                                                               119
                                                                                                                                                                                                   121 S 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                             61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTALYYCAKSVNGDSVPYGLDYWSPGLLLTVS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 QVQLQESGPSLYKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                 S
                                                                                                                                                                                                                                                                                                                                            QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rPro; IPR003596;
; PF00047; ig; 1.
T; SM00406; IGv;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPY-----GLDYWSPGL 115
                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSALAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LLTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QVQLQESGPGLVKPSETLSLTCTVSGGSISSYYWSWIRQPAGKGLEWIGRIYTSGSTNYN
                                                                                                                                                                                                                                          PSLKSRVTISVDRSKNQFSLKLTSLTAADTAVYFCARLSNWG--PYYFDYWGQGTLVTVS
                                                                                                                                                                                                                                                                                                                       QVQLQESGPGLVKPSETLSLTCTVSGGSICSYYWSWIRQPPGKGLEWIGYIYYSGSTNYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Immunol. Immunopathol. AF035041; AAD56277.1; P01825; 7FAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PSLKSRVTMSVDTSKNQFSLKLSSVTAADTAVYYCA-----SQPWELPTVGLFYWGQGT 133
                                                                                                                                                               119
                                                                                                                                                                                                                                                                                                                                                                                                      70;
                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR003006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1
119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
(TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBLrel. 13, Last sequence update)
EMBLrel. 19, Last annotation update)
IMMUNOGLOBULIN HEAVY CHAIN VARIABLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13219 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                        58.3%;
57.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58.9%;
58.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ig_MHC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13,
  10,
                                                                                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17;
Created)
Last seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                          Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   87:184-192(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Catarrhini; Hominidae;
                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1BDB86B6420EA0BE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in
                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                        358; DB 4;
No. 2e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361.5;
No. 6.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rheumatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kalis N.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119
                                                            150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .9e-29;
les 24;
                                                            A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             carditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Berney
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11;
                                                                                                                                                                                                                                                                                                                                                                                                      2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                      ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
```

19,

Last

Tue

```
RESULT
Q9BQB8
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                     В
  밁
                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 67
                                                                                                                                                                                                   Q9BQB8 PRELIMINARY; PKT; J3, CT.
Q9BQB8; PTELIMINARY; Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2001 (TrEMBLrel. 19, Last annotation update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
UNKNOWN (PROTEIN FOR MGC:1905) (PROTEIN FOR MGC:1228).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Signal.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
NON_TER
SEQUENCE
                                               EMBL;
                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v
Pfam; PF00047; 1g; 1.
SMART; SM00406; IGv; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Suh C.-H., Song C.-H., Lee C.-H., Lee S.-K.; "Clonal proliferation of IgM secreting B cell Behcet's patient with arthritis."; Submitted (OCT-1998) to the EMBL/GenBank/DDBJ EMBL; AF103795; AAC79084.1; -. HSSP; P01825; TFAB.
                                                                                    Strausberg R.
                                                                                                                            Submitted
                                                                                                                                    Strausberg
                                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Suh C.-H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                    InterPro;
                            InterPro;
                                       InterPro;
                                                                                              TISSUE-LYMPHOMA;
                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                             TISSUE-RHABDOMYOSARCOMA;
                                                                                                                                                       SEQUENCE FROM N.A
                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-DEC-2001 (TrEMBLrel. VH4 HEAVY CHAIN VARIABL)
                                                                                                                                                                                                                                                                                                            135
                                                                                                                                                                                                                                                                                                                               119
                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                    59
                                                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                σ
                                                                                                                                                                                                                                                                                                                                                                                     VSS 121
                                                                                                                                                                                                                                                                                                            VSS 137
                                                                                                                                                                                                                                                                                                                                                 YNPSLKSRVTISVDTSKNQFSLRLSSVTAADTAVYYCARLGMG-----AFDFWGHGTMVT
                                                                                                                                                                                                                                                                                                                                                              YNTALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGLDYWSPGLLLT
                                               tred (JAN-2001) to the EMBL/GenBank/DDBJ
BCC00180; AAH06180.1; -.
BC001872; AAH01872.1; -.
P01825; 7FAB.
                                                                                                                                                                                                                                                                                                                                                                                                                           67; Conserv
           IPR003600;
IPR003006;
                                                                                                                          (APR-2001)
                            IPR003599;
IPR003597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1
20
150
150
                                                                                                                                     æ
                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                               19
>150
150
16315 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARIABLE
                                                                                                                                                                                  Chordata;
Primates;
Ig.
Ig_c1.
Ig_like.
Ig_MHC.
Ig_v.
                                                                                                                                                                                                                                                                                                                                                                                                                                    54.5%;
                                                                                                                           ö
                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REGION PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MW;
                                                                                                                                                                                                                                                                                                                                                                                                                          20;
                                                                                                                         EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 334.5; DB Pred. No. 7e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
VH4 HEAVY CHAIN VARIABLE REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                 Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85664E04938AA7C9
                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       annotation update)
PRECURSOR (FRAGMENT)
                                                                                                                                                                                           Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                             ВВ
                                                                                                                                                                                                                                                                                                                                                                                                                           29;
                                                                            databases
                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                              150;
                                                                                                                                                                                                                                                                                                                                                                                                                           7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
                                                                                                                                                                                                                                                                                                                                                                   118
                                                                                                                                                                                                                                                                                                                                                                                                        58
                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                           2
```

```
밁
                Ω
                                   Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DR DR DR DR DR DR DR DR DR
                                                                                                                                                                                                                                                                                                                                                                                                                                      Вр
                                                                      Matches
                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                         InterPro; IPR003506; Ig_Mi
InterPro; IPR003506; Ig_MH
InterPro; IPR003596; Ig_V,
Pfam; PF00047; Ig; 4
SMARP; SM00409; IG; 3
SMARP; SM00407; IGC1; 3
SMARP; SM00410; IG_11ke; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam: PF00047; 1g; 5.
SMART; SM00409; IG; 2.
SMART; SM00407; IGC1; 4.
SMART; SM00406; IGv; 1.
SMART; SM00410; IG_11ke; 1.
SMART; SM00410; IG_MHC; UNN
SEQUENCE 597 AA; 65300 MW;
                                                                                                                                                                                                                 InterPro;
InterPro;
                                                                                                                                                                                                                                   EMBL;
HSSP;
                                                                                                                                                                                                                                                                                                                                  01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence up
01-DEC-2001 (TrEMBLrel. 19, Last annotation
HYPOTHETICAL 52.0 KDA PROTEIN.
Mus musculus (Mouse).
                                                                                                                 PROSITE; PS00290; IG_MHC; UNKNOWN_2.
Hypothetical protein.
SEQUENCE 479 AA; 51992 MW; 768E3
                                                                                                                                                                                                                                                     Strausberg R.;
Submitted (JAN-2001)
                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                       TISSUE
                                                                                                                                                                                                                                                                                TISSUE-MAMMARY TUMOR.
                                                                                                                                                                                                                                                                                         SEQUENCE FROM
                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                 Q99M22;
                                                                                                                                                                                                                                                                                                                                                                                         Q99M22
                                                                                                                                                                                                                                                                                                                                                                                                                                     140
                                                                                                                                                                                                                                                                                                                                                                                                                                                      117 LTVSS
90
                 61
                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
          VTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PSLKNRISITRDTSKNQFFLKLNSVTTEDTATYYCASR--
                                                                                                                                                                                                                              BC002091; AAH02091.1;
P01810; 2FBJ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PSLKSRVTISVDTSKKQLSLKLSSVNAADTAVYYCARVITRASPGTDGRYGMDVWGQGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QVQLQQWGAGLLKPSETLSLTCGVYGGSFSGYYWSWIRQPPGKGLEWIGEINHSGITNYN
                                                                     l Similarity
67; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                  IPR003599;
IPR003597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                      144
                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                         N.A.
                                                                                                                                             IG_like; 1.
                                                                                                                                                                                                                                                                                                                   Chordata;
Rodentia;
                                                                                                                                                                                     Ig.
Ig_c1.
Ig_11ke.
Ig_MHC.
Ig_v.
                                                                              53.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      54.2%;
                                                                                                                                                                                                                                                                                WAP-TGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UNKNOWN_3
MW; 2DAF
                                                                     20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20;
                                                                                                                                                                                                                                                     EMBL/GenBank/DDBJ
                                                                              Score 330; DB 1
Pred. No. 9e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 333;
Pred. No. 5
                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; | Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                ALPHA
                                                                                                                  768E39A138918892 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2DAFAD50A6375851
                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                MODEL.
                                                                                                                                                                                                                                                                                                                                                                                         479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    υB 4;
5.8e-26;
9s 36;
                                                                                                                                                                                                                                                                                                                                                                                         ₿
                                                                                                                                                                                                                                                                                7
                                                                                       11;
                                                                                                                                                                                                                                                                                                                                                     update)
                                                                      25;
                                                                                                                                                                                                                                                                                NONTHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                       Length
                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
-GYSWFPNWGQGTLV
                                                                                                                                                                                                                                                                                 ,d<u>1</u>0
                                                                                                                                                                                                                                                                                                                   Euteleostomi;
Murinae; Mus
                                                                                                                                                                                                                                                                                 GROSS
                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4;
                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                   79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         79
                                                                     ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۳.
```

Ş

118

```
PARTY OF STATE OF STA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 67
                                                                                                                                                                                                                                   Q9BU10 PRELIMINARY; PRT; 597 AA.
Q9BU10; TrembLrel. 17, Created)
O1-JUN-2001 (TrembLrel. 17, Last sequence update)
O1-DEC-2001 (TrembLrel. 19, Last annotation update)
HYPOTHETICAL 65.3 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O9UL96 PRELIMINARY; PRT; 121 AA.

Q9UL96;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
MYOSIN-EBACTIVE IMMUNOGLOBULIN HEAVY CHAIN VARIABLE
  Submitted (FEB-2001) to the EMBL; BC002963; AAH02963.1; HSSP; P01825; 7FAB.
                                                                SEQUENCE FROM N.A.
TISSUE=LYMPH, LYMPHOMA;
Strausberg R.;
                                                                                                                                                                                   Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; ig; 1.
SMART; SM00406; IGv; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AF035018; AAD56254.1; HSSP; P01825; 7FAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE=98277139; PubMed=9614934;
Wu X., Liu B., Van der Merwe P.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fetus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Myosin-reactive autoantibodies in rheumatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Young D.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               سا
                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 TVSS 121
|||:
2 TVSA 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYG--VSWVRQAPGKALEWLGGVSSGALTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YSPSLKSRLTITKDTSKNQVDLTMTFMDPWDTATYYCAHRKSGDG--YYFDYWGQGTLVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Immunol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Immunopathol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13695 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20;
                       EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 329; DB 4
Pred. No. 2e-26;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87:184-192(1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                   Catarrhini; Hominidae;
                                                                                                                                                                                                         Craniata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D582D450596BDD35 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kalis
                                                                                                                                                                                                         Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4; Length 121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               carditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Berney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGION
                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S.M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
```

RESULT Q96KX8

```
QΥ
                                                                      Qy
                                                                                                 рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
Q96AA6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                       Ş
                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                 Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query
Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR003599; Ig.
InterPro; IPR003597; Ig.cl.
InterPro; IPR003600; Ig_like.
InterPro; IPR003006; Ig_MHC.
InterPro; IPR003096; Ig_v.
Pfam; PP00047; Ig; 5.
SMART; SM00409; IG; 2.
SMART; SM00407; IGcl; 4.
SMART; SM00407; IGcl; 4.
SMART; SM00407; IGcl; 4.
SMART; SM00410; IG_like; 1.
PR0SITE; PS00290; IG_MHC; UNKNOWN_3.
                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
TISSUE=LYMPH, AND LYMPHOMA;
Strausberg R.;
                                                                                                                                                                                                                                                                                                                                                  01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence up
01-DEC-2001 (TrEMBLrel. 19, Last annotation
01-DEC-2001 (TrEMBLrel. 19, Last annotation
HYPOTHETICAL 67.8 KDA PROTEIN.
HOMO Sapiens (Human)
                                                                                                                                                                                                              Submitted (NOV-2001) to the EMBL; BC017356; AAH17356.1; Hypothetical protein. SEQUENCE 618 AA; 67758 MW
                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                 Q96AA6;
                                                                                                                                                                                                                                                                                                                                                                                                                                Q96AA6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hypothetical protein. SEQUENCE 597 AA; 65274 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          140 VTVSS
140 VTVSS
                       117 LTVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117 LTVSS 121
                                                                                                                                                  Local Similarity hes 65; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            y Match
Local Similarity
hes 65; Conserv
                                                 80
                                                                       61 TALOSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVN----GDSVPYGLDYWSPGLL
                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 TALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVN----GDSVPYGLDYWSPGLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
                                                                                                              10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGVSWVRQAPGKALEWLGGVSSGALTAYN
                                                                                                QVQLQQWGAGLLKPSETLSLTCGVYGGSFSGYYWSWIRQPPGKGLEWIGEINHSGSTNYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \tt QVQLQQWGAGLLKPSETLSLTCGVYGGSFSGYYWSWIRQPPGKGLEWIGEINHSGSTNYN
                                                 PSLKSRVTISVDTSKKQLSLKLSSVNAADTAVYYCARVITRASPGTDGRYGMDVWGQGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PSLKSRVTISVDTSKKQLSLKLSSVNAADTAVYYCARVITRASPGTDGRYGMDVWGQGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           144
                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53.6%;
                                                                                                                                                              53.6%;
                                                                                                                                                                                                                MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19;
                                                                                                                                                  19;
                                                                                                                                                                                                                                                   EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 329; DB 4; I
Pred. No. 1.5e-25;
9; Mismatches 37;
                                                                                                                                                            Score 329;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2DAFA8FB7E055851 CRC64;
                                                                                                                                                                                                                96DBD4C7C696E0A6
                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                              618
                                                                                                                                                DB 4;
1.6e-25;
nes 37;
                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                     databases
                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 597
                                                                                                                                                                                                                CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                  Indels
                                                                                                                                                4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79
                                                                                                                                                 ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲,
```

٠,

```
RESULT
Q9UL75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Ma
Best Loc
Matches
Query Match
Best Local Similarity
Matches 66; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q96KX8 PRELIMINARY; PRT; 496 AA.
Q96KX8;
Q1-DEC-2001 (TrEMBLrel. 19, Created)
Q1-DEC-2001 (TrEMBLrel. 19, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
HYPOTHETICAL 53.4 KDA PROTEIN.
HOmo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                    NON_TER
SEQUENCE
                                                                                                                             Clin. Immunol. Immunopathol. EMBL; AF035039; AAD56275.1; HSSP; P01825; 7FAB.
                                                                                                                                                                                                                                                                                    01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updat
MYOSIN-REACTIVE IMMUNOGLOBULIN HEAVY CHAIN VARIAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Strausberg R.;
Submitted (OCT-2001) to the
EMBL; BC016369; AAH16369.1;
Hypothetical protein.
SEQUENCE 496 AA; 53391 MP
                                                                                                                                                                                                     SEQUENCE FROM N.A. MEDLINE=98277139; PubMed=9614934;
                                                                                                      InterPro; IPR003006; Ig_MHC. InterPro; IPR003596; Ig_v.
                                                                                                                                                                                          Wu X., Liu B.,
                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                              Q9UL75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
                                                                        NON_TER
                                                                                     SMART;
                                                                                                                                                                                 Young D.C
                                                                                                                                                                                                                                                                     Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-LUNG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                   140
                                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                        Myosin-reactive autoantibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                    12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                  TVSS
                                                                                                                                                                                                                                                                                                                                                                                                                       TVSS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QVQLQESGPSLVKPSQTLSLTCTVSGFSL--TKYGVSWVRQAPGKALEWLGGVSSGALTA 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QLQLQESGPGLVKSSETLSLTCTVSGGSISSSSYYWGWIRQPPGKGLEWIANTYYSGITY
                                                                                                                                                                                                                                                                                                                                                                                                                                          YNPSLKSRVTISVDTSKNQLSLKVRSVTAADTAVYFCARHGYSRSGRTGAIDYWGQGTLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                             YNTALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYG-LDYWSPGLLL 117
                                                                                    SM00406;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             an protein.
                                                                                                                                                                                                                                                                                                                                                                                                  143
                                                    122
122 /
  Conservative
                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                 ; 1g; 1.
5; IGv; 1.
                                                     ΑA;
                                                                                                                                                                                           Van
                                                                                                                                                                                            der
                                                    122
13719 MW;
                                                                                                                                                                                                                                              Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53391 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52.7%;
        51.7%;
52.0%;
                                                                                                                                                                                           Merwe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20;
  20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL/GenBank/DDBJ
Score 317.5;
Pred. No. 3.1e
Pred. Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 323.5; DB (
Pred. No. 4.4e-25; 
0; Mismatches 35
                                                                                                                                                  87:184-192(1998)
                                                                                                                                                                                           P.L.,
                                                                                                                                                                                                                                                Craniata; Vertebrata; Catarrhini; Hominidae;
                                                     56CB0612586A6529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D346929849040D69
                                                                                                                                                                      'n
                                                                                                                                                                       rheumatic carditis
                                                                                                                                                                                           Kalis
                                                                                                                                                                                                                                                                                        CHAIN VARIABLE
                                                                                                                                                                                          N.N.,
           .1e-25
                                                                                                                                                                                                                                                                                                                                              B
                    DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35;
  30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 databases
                                                                                                                                                                                           Berney S.M
                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRC64;
                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
  Indels
                                                                                                                                                                                                                                                          Euteleostomi;
                                                                                                                                                                                                                                                                                          REGION
                                                                                                                                                                      and
                      122;
                                                                                                                                                                        normal
 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   79
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
```

```
RESULT
Q9Y509
                                                                                                                                                                                   B
                                                                                                                                                                                                     δã
                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                           В
                                                                                                                                                             Q
                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 61; Conser
                                    Q96BB9 PRELIMINARY; PR
Q96BB9; O1-DEC-2001 (TrembLrel. 19, Crea
01-DEC-2001 (TrembLrel. 19, Last
01-DEC-2001 (TrembLrel. 19, Last
HYPOTHETICAL 65:0 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; C
Mammalia; Eutheria; P
NCBI_TaxID=9606;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1999
01-NOV-1999
01-DEC-2001
         Homo sapiens (Human)
Eukaryota; Metazoa; (
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9Y509;
                                                                                                                                                                                                                                                                                                                                                                             Cao J., Vescio R.A., Rettig M.B., Hong C.H., K
Lichtenstein A.K., Berenson J.R.;
"A CD10-positive subset of malignant cells is
myeloma using PCR with patient-specific immuno
Leukemia 9:1948-1953(1995).
Leukemia 9:1948-1953(1995).
EMBL, S80860; AbD14339.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. MEDLINE-96071149; PubMed-7475288;
                                                                                                                                                                                                                                                                                                                             SMART; SM00406; IGV;
                                                                                                                                                                                                                                                                                                                                               InterPro; IPR003006; Ig_MHC InterPro; IPR003596; Ig_v. Pfam; PF00047; 1g; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).

Motazoa; Chordata;
                                                                                                                                           121
                                                                                                                                                               116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115
                                                                                                                                                                                                       60
                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 57
                                                                                                                                                                                                                          ш
                                                                                                                                                                                                                                              ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN
                                                                                                                                                                                                                         QVQLQESGPSLVKPSQTLSLTCTVSGFSLTKYGV--SWVRQAPGKALEWLGGV--SSGAL
                                                                                                                                           LVTVSS
                                                                                                                                                              LLTVSS
                                                                                                                                                                                   AGSVKGRFTISRDNSKNTLYLQMTSLRVEDTAVYYCAKDGNYFDSVGYYYAGIDYWGQGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TLVTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LLLTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAYNTALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVN--GDSVPYGLDYWSPG
                                                                                                                                                                                                     NTALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVN-GDSVPY---GLDYWSPGL 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NDYRVSVKSRITINPDTSKNQFSLQLNSVTPEDTAVYYCARDLELLGQ-----FDYWGQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QVQLQQSGPGLVKPSQTLSLTCAISGDSVSSNSAAWNWIRQSPSRGLEWLGRTYYRSKWY
                                                                                                                                                                                                                                                                                                                   147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (FRAGMENT).
                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                   AA;
          Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                   15768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Primates;
                                                                                                                                                                                                                                                                           49.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12,
12,
19,
                                                                                                                                                                                                                                                                                                                   ₩;
                                                                                                                                                                                                                                                                   25;
                                               Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
Last sequence up
                                                                                                                                                                                                                                                                           Score 305.5; DB 4
Pred. No. 6.7e-24;
          Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                   8489FCAAA7BC925C CRC64;
                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     147
                                                                                          597
                                                                                                                                                                                                                                                                                                                                                                                                            immunoglobulin gene
                                                                                          ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                        Kim
                                                                                                                                                                                                                                                                   35;
                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                        Α.,
                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                         Lee
                                                                                                                                                                                                                                                                                                                                                                                                                                         J.C
                                                                                                                                                                                                                                                                                                                                                                                                            multiple
primers.";
                                                                                                                                                                                                                                                                  5,
                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                   120
                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                              59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
```

ω ,

```
밁
                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                     Дb
                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 59
                                                                                                              Query Match 48.1
Best Local Similarity 45.9
Matches 56; Conservative
                                                                                                                                                                  NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                Q9UL84 PRELIMINARY; PRT; 122 AA.
Q9UL84;
Q1-MAY-2000 (TrEMBLrel. 13, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
MYOSIN-REACTIVE IMMUNOGLOBULIN HEAVY CHAIN VARIABLE REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Strausberg R.;
Submitted (CCT-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; BC015760; AAH15760.1; -.
Hypothetical protein.
SEQUENCE 597 AA; 65039 MW; 4FCA3AD8ECE263D9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    [1]
SEQUENCE FROM N.A.
TISSUE-PRIMARY B-CELLS FROM TONSILS;
                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

MEDLLINE-98277139; PubMed-9614934;

Wu X., Liu B., Van der Merwe P.L., Kalis N.N., Berney S.M.,

Tyoung D.C.;
                                                                                                                                                                                                                                                                                                                                      Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
[1]
                                                                                                                                                                                          InterPro; IPR003006; Ig_MHC.
InterPro; IPR003596; Ig_v.
Pfam; PF00047; ig; 1.
SMART; SM00406; IGV; 1.
NON_TER 1
                                                                                                                                                                                                                                          EMBL; AF035030; AAI HSSP; P01772; 2FB4
                                                                                                                                                                                                                                                             Clin. Immunol. Immunopathol. 87:184-192(1998).
                                                                                                                                                                                                                                                                          fetus."
                                                                                                                                                                                                                                                                                                                                                                                          (FRAGMENT)
        120
                                                                                                                                                                                                                                                                                  Myosin-reactive autoantibodies in rheumatic carditis and normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         140 VTVSS 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              117 LTVSS 121
                             61
                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲
                                                                                 -- ss
                           ADSVKGRFTISRDNSRDTLYLOMNSLRAEDTAVYYCAKDPRGYSASGNYTREDYWGQGTL 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NTALQSRLSVTRDTSKSQFSLSLSSVTTEDTAIYYCAKSVNGDSVPYGL---DYWSPGLL 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 59; Conserv
          121
                                                                                                                                                                   122
122 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                     AAD56266.1;
                                                                                                                                                                   122
13579 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48.7%;
                                                                                                                         48.18;
                                                                                                                24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21;
                                                                                                                Score 295.5; DB 4;
Pred. No. 5.7e-23;
24; Mismatches 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 299; DB 4;
Pred. No. 1.9e-22;
1; Mismatches 41
                                                                                                                                                                   36054D41366545B8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                 Indels
                                                                                                                                  Length
                                                                                                              1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4.
                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                     60
                                                                                                                ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۷,
```

ï

.

Db 121 SS 122

Search completed: August 12, 2002, 09:24:40 Job time: 110 sec

THIS PAGE BLANK (USPTO)

Tue

Aug

```
9b_om:AF023843
9b_om:BFU32249
9b_om:AF172695
9b_om:AF172692
9b_om:AF172692
9b_om:AF172685
9b_om:AF172685
9b_om:AF172682
9b_om:AF172682
9b_om:AF172682
9b_om:AF172701
                                                                                                                                                                                                                                                                                                                     9b_om:BTU31106
9b_om:BTU32255
9b_om:AF015791
9b_om:AF015793
9b_om:AF172698
                                                                                                                                                                                                                                                                                                                                                                                                                         9b_om:BTU32250
9b_om:AF172700
9b_om:AF015797
9b_om:AF172697
9b_om:AF109697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gb_om:BTU32261
gb_om:AF172696
gb_om:AF172691
gb_om:AF172690
gb_om:AF172689
                                                                                                                                                                                                                                   gb_om:AF023841
gb_om:BTU32254
gb_om:AF172699
gb_om:AF015796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_om: AF015798
gb_om: AF015799
gb_om: AF015801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database sequences: 1797656
Database length: 1873333701
Search time (sec): 1937.690000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Search information block:
Query: US-09-786-015-4
Query length: 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_om:AF172688
gb_om:AF172693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_om:AF172686
gb_om:AF172687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_om:AF015795
gb_om:AF015792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            score_list:
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_om:AF172684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database: GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -MODEL-frame+_P2n.model -DEV-xlp
-Q-/cgn2_1/USPTO_spool/US99786015/runat_12082002_092422_53/app_query.fasta_1.347
-Q-/cgn2_1/USPTO_spool/US99786015/runat_12082002_092422_53/app_query.fasta_1.347
-DB-GenEmb1 -QFMT=fastap -SUFFIX-P2n.rge -GAPOP-12.000
-GAPEXT=4.000 -MINMATCH=0.100 -COOPEL-0.000 -COOPEXT=0.000
-GGAPEXT=0.050 -XGAPOP-10.000 -YGAPEXT=0.500
-FGAPEXT=7.000 -YGAPOP-10.000 -YGAPEXT=0.500
-DELOP=6.000 -DELXT=7.000 -YGAPOP-10.000 -YGAPEXT=0.500
-DELOP=6.000 -DELXT=7.000 -YGAPOP-10.000 -THR_SCORE-PCT
-TRANS=human40.cd1 -LIST=45 -DOCALIGN=200 -THR_SCORE-PCT
-THR_MAX=100 -THR_MIN=0 -ALIGN=15 -MODE-LOCAL -OUTFMT-Pfs
-NORM-ext -HEAPSIZE=500 -AUNICENO -MAXEN-200000000
-USER-US09786015_@CGN1_1_7012 -NCPU=6 -ICPU=3 -LONGLOG
-USCR-US09786015_@CGN1_17012 -NCPU=6 -ICPU-3 -LONGLOG
-USCR-US09786015_@CGN1_17012 -NCPU=6 -ICPU-3 -LONGLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of: US-09-786-015-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aug 12, 2002 10:39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Results
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Results were produced by the GenCore software, Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      line parameters:
      4 Origo

451.500

447.000

444.500

444.500

444.500

444.500

444.500

440.50

440.50

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

439.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00

459.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to: GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ą
      out_format :
                                                                                                                                                                                                                                                                                                                                                                                                                         1.3e-35
1.2e-35
2.7e-35
4.3e-35
8.6e-35
                                                                                                                                                                         1.7e-34
3.3e-34
3.5e-34
                                                                                                                                                                                                                                                                              1.1e-34
1.3e-34
                                                                                                                                                                                                                                                                                                                                                               1.1e-34
1.1e-34
9.8e-35
                                                                                                                                                                                                                                                                                                                          9991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.1e-35
                                                                                        3.3e-34
3.5e-34
1.9e-34
5.0e-34
5.2e-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .0e-36
.7e-36
.7e-36
.7e-36
.7e-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .2e-37
.9e-37
.7e-36
.1e-36
.7e-36
.0e-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EScore
                                                                                                                                                                                                                                     .2e-34
.4e-34
                                                                                                                                                                                                                                                                                                                        .8e-35
.9e-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .4e-36
        version
U32261 Bos taurus clone 16 immu AF172696 Ovis aries clone 83 in AF172691 Ovis aries clone 81 in AF172690 Ovis aries clone 100 in AF172690 Ovis aries clone 100 in AF172690 Ovis aries clone 100 in AF172689 Ovis aries clone 14 in AF015792 Bos taurus immunoglobu AF015792 Bos taurus immunoglobu AF015799 Bos taurus immunoglobu AF172680 Ovis aries clone 64 in U32250 Bos taurus clone 3 immun AF172697 Ovis aries clone 64 in U32250 Bos taurus immunoglobu AF015791 Bos taurus immunoglobu AF015794 Bos taurus immunoglobu U32254 Bos taurus immunoglobu U32254 Bos taurus immunoglobu AF023841 Bos taurus immunoglobu AF023843 Bos taurus immunoglobu AF023845 Bos taurus immunoglobu AF023845 Bos taurus immunoglobu AF023840 Bos taurus immunoglobu AF023843 Bos taurus immunoglobu A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Documentation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
LOCUS BTU32261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: gb_om:BTU32261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                 misc_feature
                                                                                                                                                 mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                         sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aitken,R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9540398:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92261635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to
```

```
gb_om:BTA012803
gb_om:BTU11633
gb_om:AF172694
gb_om:BTA012804
gb_om:AF040904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bovidae; by Long 1 (bases 1 to 393)
1 (bases 1 to 393)
Ivanov,V.N., Karginov,V.A., Mo
Molecular cloning of a bovine
Molecular 41-48 (1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BTU32261 393 bp mRNA linear MAM 25-APR-1996
Bos taurus clone 16 immunoglobulin lambda light chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (25-JUL-1995) Robert Altken,
Biomedical and Life Sciences, Universit
Building, Glasgow Gl2 80Q, UK
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      region (Vlambdala) mRNA,
U32261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sinclair,M.C., Gilchrist,J. and Aitken,R.
Molecular characterization of bovine V lambda regions
J. Immunol. 155 (6), 3068-3078 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               anti-testosterone monoclonal IgG1 antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Jackson, T., Morris, B.A. and Sanders, P.G. Nucleotide sequences and expression of cDNAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gene 67 (1), 41-48
88329743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U32261.1 GI:1276622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 393)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 393)
              region"
67. 132
/gene="Vlambdala"
                                                                                                                                                           /translation="MSTMAWSPLLLTLVTLCTGSWAQAVLTQPSSVSGSLGQRVSITC
SGSSSNVGTGNYVSWFQQIPGSAPRTLIYGATSRASGVPDRFSGSRSGNTATLTISSL
QAEDEADYFCASYQSSNTAVFGSGTTLTV"
                                                                                                                                                                                                                                                                  region"
                                                                                                                                                                                                                                                                                                                       /note="Vlambdal family, group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cell_type="lymphocyte"
/tissue_type="spleen"
/dev_stage="adult"
                                                                                                                                                                                                                       /protein_id="AAC48561.1"
/db_xref="GI:1276623"
                                                                                                                                                                                                                                                                                     /product="immunoglobulin lambda light chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Bos taurus"
/db_xref="taxon:9913"
/note="encodes framework region
                                                                            /product="immunoglobulin
                                                                                                  /note="Vlambda1 family,
                                                                                                                       /gene="Vlambda1a"
                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                              /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                       /gene="Vlambdala"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="16"
                                                                                                                                                                                                                                                                                                                                                                                                                                ′gene≖"Vlambda1a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      415
414
413
412
409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        393)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    748.33
744.72
743.74
742.76
731.94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2.5e-33
4.0e-33
4.5e-33
5.1e-33
2.1e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Morozov, I.V. and ne immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     t Aitken, Microbiology, Institute of University of Glasgow, Joseph Black
                                                                                                group
                                                                            lambda light chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ012803 Bos taurus mRNA for
Ul1633 Bos taurus Bl1 cell-1
AF172694 Ovis aries clone 47
AJ012804 Bos taurus mRNA for
AF040904 Ovis aries immunogl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gorodetsky, S.I.
lambda chain cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a bovine
```

```
SOURCE
ORGANISM
                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                             seq_documentation_block:
LOCUS AF172696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-786-015-4 x BTU32261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                 seq_name: gb_om:AF172696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: BTU32261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                   367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_teature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                TTCGGCAGCGGGACCACACTGACCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PheGlySerGlyThrArgLeuThrVal 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGGTGCGACCAGTCGAGCCTCGGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTCTCCATCACCTGCTCTGGAAGCAGCAGCAACGTTGGAACTGGCAATT 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality:
Ratio:
                                                                                                                                                                            330 bp
Ovis aries clone 53 immunoglobulin
(IGLV) mRNA, partial cds.
AF172696
                                                                 Ovis aries
                                                                                                 sheep
      Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                         AF172696.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="Vlambdala"
/note="encodes composition of the composition of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="Vlambda1a"
/note="encodes complementarity-determining 367. . . 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     455.00
4.461
93.578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Vlambdala"
/note="encodes framework region
132 c 105 g 82 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="encodes complementarity-determining region 241..336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="encodes framework region
337. .366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="Vlambdala"
/note="encodes fra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="Vlambda1a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Vlambdala"
                                                                                                                                                         GI:5802439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent
Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           framework
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complementarity-determining region
                                                                                                                                                                                                                                                                                                                                                                                                                                   393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ţo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           region
                                                                                                                                                                                                                                          mRNA linear MAM 29-AUG-1999
light chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
0
81.651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      us-09-786-015-4 x AF172696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: AF172696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                   198
                                                                                                                                                                                                                                   148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                  298
                                                                 101
                                                                                                   248
                                                                                                                                    84
                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                                    98
                                                                                                                                                                                                                                                                                                                                 34
                                                                                                                                                                                                                                                                                                                                                                      51
                                                                                                                                                                                                                                                                                                                                                                                                    17
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr 17
                                                                                                                                                                 rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                                                                                SeralaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
:::|| | ||||||||||:::|||||||||||||||
TATATTGCAACCATTCGAGCCTCGGGGGTCCCCGACCGATTCTCCGGCTC 19
                                                                                                                                                                                                                                                                                                                    gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                                                                                                                                                                                                                                                                                                                                  GGTCTCCATCACCTGTTCTGGAAGCAGCAGCAACATC...
                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGCTGTGCTGACTCAGCCGTCCTCCGAGTCCGGGTCCCTGGGCCAGAG
                                                 PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                    ATGGTAATTGGTACCAACAGGTCCCAGGATCAGCCCCCAAACTCCTCATC
gb_om:AF172691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 330) White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (26-JUL-1999) School of Veterinary Science, The Centre for Animal Biotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     White, G.P., Meeusen, E.N.T. and Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovidae; Caprinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 330)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTRLTVLG"
a 101 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="Anb51686.1"
/protein_id="Anb51686.1"
/db_xref="GI:5802440"
/translation="QAVLTQPSSESGSLGQRVSITCSGSSSNIGRGYGNWYQQVPGSA
/KLLTYIATIRASGVPDRFSGSRSGNTATLTISSLQAEDEADYYCASYDGNSYGIFGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    451.50
4.426
91.892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tissue_type="abomasal lymph node"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps:
: Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
O:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Newton, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                    .GGGCGTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82.883
                                                                                                                                                                 247
                                                                                                                                                                                                                                   197
                                                                                                                                                                                                                                                                                                    147
                                                                                                                                                                                                                                                                                                                                                                    97
                                                                                                                                                                                                                                                                                                                                                                                                                                   50
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                     alignment_block:
US-09-786-015-4 x AF172691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_documentation_block:
LOCUS AF172691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: AF172691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                       101
                                       151 TATGGTGCAACCAATCGAGCCTCGGGGGTCCCCGACCGATTCTCTGGCTC
                                                                               51
                                                                                                                                        34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle 50
                                                                                                                                                                                                 51 TGTCTCCATCACCTGCTCTGGAAGCAGCAGCGACGTTGGATATGGTAATT 100
                                                                                                                                                                                                                        17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                                                                                                                                                                                                                                                                        1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                             SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
                                                                                                                                                                                                                                                                                 CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAAGTCCCTGGGCCAGAG
rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                   ATGTGGGCTGGTTCCAACAGGTCCCTGGATCAGCCCCCAAACTCCTCATT 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ovis aries clone 81 immunoglobulin light chain variable region (IGLV) mRNA, partial cds.

AF172691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (26-JUL-1999) School of Veterinary Science, 'Gor Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 333) White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sheep.
Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          White, G.P., Meeusen, E.N.T. and Newton, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nematode parasite Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF172691.1 GI:5802429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SGTRLTVLG"
a 102 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="immunoglobulin light chain variable region"
/protein_id="AAD51681.1"
/db_xref="G1:5802430"
/translation="QAVLTQPSSVSKSLGQSVSITCSGSSSDVGYGNYVGWFQQVPGS
/translation="QAVLTQPSSVSKSLGQSVSITCSGSSSDVGYGNYVGWFQQVPGS
AFKLLIYGATNRASGVPDRFSGSSFGNTATLTISSLQADDEADYYCASYDTSSDGVFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="81"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  447.00
4.382
91.892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /t1ssue_type="abomasal lymph node"
1. .333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                 to: 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ς+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  111
0
: 79.279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
[7]
  84
                                                                                                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MAM 29-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The Centre, Parkville,
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                        alignment_block:
US-09-786-015-4 x AF172690
                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_documentation_block:
LOCUS AF172690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: gb_om:AF172690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                              Ratio:
Percent Similarity:
                                                                                                       Align seg 1/1 to: AF172690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                     GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                    CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAAGTCCCTGGGCCAGGG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCGGCAGCGGGACCAGGCTGACCGTCCTGGGT 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      White,G.P., Meeusen,E.N.T. and Newton,S.E.
A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestina. nematode parasite Haemonchus contortus unpublished
Opublished
Obases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (26-JUL-1999) School of Veterinary Science, for Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF172690 333 bp r
Ovis aries clone 100 immunoglobulin
                                                                                                                                                                                                                                 Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 (bases 1 to 333) White, G.P., Meeusen, E.N.T. and Newton, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sheep.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF172690.1 GI:5802427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF172690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IGLY) mRNA, partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1
                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="aab51680.1"
/db_xref="GI:5802428"
/translation="QAYLITQPSSVSKSLGQGVSITCSGSSSNVGYGNYVSWFQLIPGS
APKVLIYGAASRASGVPDRFSGSRSGNFATLTISSLQAEDEADYYCASYDSSSSGAFG
SGTRLTYLG"
                                                                                                                                                                                              446.00
4.330
92.793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="abomasal lymph node"
1. .333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="100"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Ovis aries"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to 333
                                                                                                                                                                                                                                                                                                                        100 c
                                                                                                         from: 1
                                                                                                                                                                                              Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                      94 g
                                                                                                         .
.
                                                                                                         333
                                                                                                                                                                                                                                                                                                                        76 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA linear MAM 2
light chain variable
                                                                                                                                                                                                79.279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAM 29-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The Centre, Parkville,
```

100

34

17

50

84

250

67 200

150

```
BASE COUNT
 alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_documentation_block:
LOCUS AF172689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: gb_om:AF172689
                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATGGTGCAGCCAGTCGAGCCTCGGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle 50
|||||:::|||:::||| :::|||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTGAGTTGGTTCCAACTCATCCCAGGATCAGCCCCCAAAGTCCTCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGAGGCCGATTATTACTGTGCATCTTATGACAGCAGTAGCAGTGGTGCT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCGGCAGCGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ovis aries
Eukaryota;
Mammalia; E
                                                                                                                                                                                                                                                                                                                                                                                                       White,G.P., Meeusen,E.N.T. and Newton,S.E. Direct Submission Submitted (26-JUL-1999) School of Veterinary Science, for Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       White, G.P., Meeusen, E.N.T. and Newton, S.E.
A single-chain variable region immunoglobulin library from the
abomasal lymph node of sheep infected with the gastrointestinal
nematode parasite Haemonchus contortus
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AF172689 333 bp mRNA linear MAM 29-AUG-1999 Ovis aries clone 34 immunoglobulin light chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sheep.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF172689.1 GI:5802425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (IGLV) mRNA, partial cds.
AF172689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 333)
                                                                                                        89
                                                                                                      SGTRLTVLG"
a 97 c
                                                                                                                                                                                                                                                          /gene="IGLV"
<1. .>333
                                                                                                                                                                                                                                                                                                                       /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="34"
     445.00
4.450
                                                                                                                                      /translation="QAVLTQPSSVSRSLGQSVSITCSGSSSNIGYGNYVSWYQQVPGS
APKILIYGATSRASGIPDRFSGSRFGNTATLTISSLQAGDESDYYCASYQTDDSEIFG
                                                                                                                                                                     /codon_start=1
/product="immoglobulin light
/protein id="AAD51679.1"
/db_xref="GI:5802426"
                                                                                                                                                                                                                                         /gene="IGLV"
                                                                                                                                                                                                                                                                                           /tissue_type="abomasal lymph node"
1. .333
                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Metazoa; Chordata; Craniata; Vertebrat
Eutheria; Cetartiodactyla; Ruminantia;
                                                                                                    91 g
   Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                333
                                                                                                      77
                                                                                                      4
   111
                                                                                                                                                                                                      chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                      The Centre
                                                                                                                                                                                                      region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bovoidea;
                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_documentation_block:
LOCUS AF015795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: gb_om:AF015795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_block:
                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to: AF172689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-786-015-4 x AF172689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
|||||:::|||||||||||||||||||:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGGTGCAACCAGTCGAGCCTCGGGGATCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGTGAGCTGGTACCAACAGGTCCCAGGATCAGCCCCCAAAATCCTCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAGGTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGAGTCCGATTATTACTGTGCGTCTTATCAGACTGATGACAGTGAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF015795
AF015795.1
                                                                                                                                                                                                                                                                                                                  Saini, S.S., Allore, B., Jacobs, R.M. and Kaushik, A. Exceptionally long CDR3H region with multiple cys functional bovine IgM antibodies
Eur. J. Immunol. 29 (8), 2420-2426 (1999)
                                                                                                                                                                                                        õ
                                                                                                                                                                                                                  2 (bases 1 to 333)
Saini.S.S., Jacobs,R. and Kaushik,A.
Direct Submission
Submitted (24-JUL-1997) Pathobiology,
                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bos taurus
                                                                                                                                                                                                                                                                                                           99387993
                                                                                                                                                                                                                                                                                                                                                                                                       Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                        10458755
                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 333)
                                                                                                                                                                                                        2W1,
/codon_start=1
/product="immunoglobulin
/protein_id="AAB66566.1"
/db_xref="GI:2323380"
                                                                                 antibody"
                                                                                                                                  /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                   /note="bovine x mouse heterohybridoma
                                                                                                                    /clone="BLV4B8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 90.090
                                                                                                                                                                                   location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               333 bp
immunoglobulin light
                                                                                                                                                                                                        Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:2323379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Identity: 81.081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 سا
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chain variable
                                 light chain variable region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                      University of Guelph, Guelph,
```

linear

region mRNA,

MAM 10-MAR-2000 on mRNA, partial

cysteine

residues

'n

Euteleostomi;

Bovoidea;

secreting

IgM

```
REFERENCE
AUTHORS
TITLE
                                                        JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
US-09-786-015-4 x AF015795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                         seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
             FEATURES
                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1 to: AF015795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
                                           JOURNAL
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ValPheGlySerGlyThrArgLeuThrValLeu 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 spGluAlaAspTyrTyrCysAlaSerTyr...GlnSerThrTyrSerGly
|||||||||||||:::|||||:::||
|CGAGGCGGATTATTTCTGTGCAGCTTATGACAGCAGTACAAATAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTTTCGGCAGCGGGACCACACTGACCGTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATEGTECGACCAGTCGAGCCTCTGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTGAACTGGTTCCAACAGATCCCAGGATCGGCCCCCAGAACCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTCTCCATCACCTGCTCTGGAAGCAGCAGCAACGTTGGGCGTGGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                     gb_om:AF015792
                                                                                                                                                                                                                                                                                                           AF015792
AF015792.1
                        2 (bases 1 to 333)
Saini.S.S., Jacobs,R. and Kaushik,A.
Direct Submission
Submitted (24-JUL-1997) Pathobiology, University of
ON NIG 2W1, Canada
                                                                                                                                                  1 (bases 1 to 333)
Saini.S.S., Allore.B., Jacobs,R.M. and Kaushik,A.
Exceptionally long CDR3H region with multiple cysteine functional bovine IgM antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality:
                                                                                                                        Eur. J. Immunol. 29 (8), 2420-2426 (1999)
99387993
                                                                                                                                                                                                                Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                             Bos taurus
                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                        10458755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSGTTLTVL"
a 106 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          444.50
4.316
92.793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="QAVLTQPSSVSGSLGQRVSITCSGSSSNVGRGNYVNWFQQIPGS
APRTLIYGATSRASGVPDRFSGSRSGNTATLTISSLQAEDEADYFCAAYDSSTNNAVF
         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                        333 bp mRh
immunoglobulin light chain
                                                                                                                                                                                                                                                                                                             GI:2323373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ţo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80.180
                                                                                                                                                                                                                                                                                                                                                          variable region mRNA, partial
                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200
                                          Guelph,
                                                                                                                                                                                                                                                                                                                                                                          MAM 10-MAR-2000
                                                                                                                                                                    residues
                                                                                                                                                                                                                                  Bovoidea,
                                        Guelph
```

```
REFERENCE
AUTHORS
                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                          seq_documentation_block:
LOCUS AF172684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-786-015-4 x AF015792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                            KEYWORDS
                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                    seq_name: gb_om:AF172684
                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                   251
                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                                                                                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101
                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51 GGTCTCCATCACCTGCTCGGGAAGCAGCAGCAACGTTGGGCGTGGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ValPheGlySerGlyThrArgLeuThrValLeu 110
                                                                                                                                                                                                                                                                                                                                                                                  spGluAlaAspTyrTyrCysAlaSerTyr...GlnSerThrTyrSerGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                       GTTTTCGGCAGCGGGACCACACTGACCGTCCTG
                                                                                                                                                                                                                                                                                                                                                                   ACGAGGCGGATTATTTCTGTGCAACTTATGACAGCAGTAGTAATAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGTCTGGGAACACAGCCACACTGACCATCACCTCGCTCCAGGCCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATGGTGCGACCAGTCGAGCCTCTGGGGTCCCCGACCGATTTTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
Eukaryota; Metazoa; Chordata; Craniata; Verrebrata; Euteleostom Mammalia; Eutheria; Cetartiodactyia; Ruminantia; Pecora; Bovoid Bovidae; Caprinae; Ovis.

1 (bases 1 to 333)

White, G.P., Meeusen, E.N.T. and Newton, S.E.

A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                     AF172684 333 bp mRNA line
Ovis aries clone 17 immunoglobulin light chain
                                                                                                             Ovis aries
                                                                                                                             sheep.
                                                                                                                                                                         (IGLV) mRNA, partial cds. AF172684
                                                                                                                                                            AF172684.1 GI:5802415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF015792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSGTTLTVL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/product="immnoglobulin light chain variable region"
/protein_id="AnaB66563.1"
/protein_id="AnaB66563.1"
/db_xref="G1:2323374"
/translation="QAVLTQPSSVSGSLGQRVSITCSGSSSNVGRGNYVNWFQQIPGS
APRTLIYGATSRASGVPDRFSGSRSGNTATLTITSLQAEDEADYFCATYDSSSNNGVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           443.50
4.306
92.793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="bovine x mouse heterohybridoma secreting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="BLV1G9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps:
Identity: 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
                                                                                                                                                                                                                                                                                                       333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       đ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .279
                                                                                                                                                                                                                          linear
                                                                                                                                                                                                          variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150
                                                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50
                                                                                                Euteleostomi;
                                                                                                                                                                                                                          MAM 29-AUG-1999
                                                                                                                                                                                                          region
                                                                               Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IgM
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                    seq_documentation_block:
LOCUS AF172686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-786-015-4 x AF172684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                           seq_name: gb_om:AF172686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: AF172684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                              151
                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                       201
                                                                                                                                                                                           84
                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                        51
                                                                                                                                                                                                                                                                                                                                               17
                                                                                                                                                                                                                                                                                                                                                                                        51
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                     gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                              TATGGTGCAACCAGTCGAGCCTCAGGGGTCCCCGACCGATTTTCCGGCTC
                                                                                                                                                                                                                                                                                          SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
                                                                                                                                                                                                                                                                                                                                                                                        TGTCTCCATCACCTGCTTTGGAAGCAGCAGCAACGTTGGATATGGTAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAGGTCCCTGGGCCAGAG
                                                                                                        TTCGGCAGCGGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                  PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                 rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                    ATGTGAGCTGGTACCAACAGGTCCCCAGGATCAGCCCCCAAACTCCTCATT
                                                                                                                                                               ACGAGGCCGATTATTACTGTGCATTTTATGACAGCAGTAATTATGGTGTT
330 bp
Ovis aries clone 14 immunogiobulin
(IGLV) mRNA, partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    White, G.P., Meeusen, E.N.T. and Newton, S.E. Direct Submission
Submitted (26-JUL-1999) School of Veterinary Science, The Centre for Animal Biotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nematode parasite Haemonchus
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /Godon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="AAD51674.1"
/db_xref="G1:5802416"
/translation="QAVLTQPSSVSRSLGQSVSITCFGSSSNVGYGNYVSWYQQVPGS
APKLLIYGATSRASGVPDRFSGSRFGNTAALTISSLQAEDEADYYCAFYDSSNYGVFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="IGLV"
<1. .>333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        442.00
4.420
90.090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="abomasal lymph node"
1. .333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contortus
                                                                                                        333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
                     light chain variable region
                                    mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        111
0
80.180
                                    linear
                                                                                                                                                                                                                                                                                                                                                             50
                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                 ω
4
                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                               50
                                                                                                                                                                                                                                                                                                                                  150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17
                                                                                                                                                                                                                     250
                                                                                                                                                                                                                                                                             200
                                    MAM 29-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                    Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                       151
                                                                                                                                                              101
                                                 201
                                                                           67
                                                                                                                                 51
                     84
                                                                                                                                                                                                                     51
                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
```

```
alignment_block:
US-09-786-015-4 x AF172686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1 to: AF172686
                                                                                                                                                                                                                                         34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle ::|||:::|||||||||||||
                                                                                                                                                                                                                                                                                                                         17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                             1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
                                            TTGTGAGCTGGTACCAACAGGTCCCCAGGATCAGCCCCCAAACTCCTCATT
                                                                                                                                                                                                                                                                                                       TGTCTCCATCACCTGCTCTGGAAGCAGCAGCAACGTTGGATATGGTAATT
                                                                                                                                                                                                                                                                                                                                                                                         CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAGGTCCCTGGGCCAGAG
                                                                                   rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nematode parasite Haemonchus contortus
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (26-JUL-1999) School of Veterinary Science, The Centre for Animal Biotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              White, G.P., Meeusen, E.N.T. and Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF172686
AF172686.1 GI:5802419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovidae; Caprinae; Ovis.
1 (bases 1 to 330)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 330)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTRLTVLG"
a 98 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="IGLV"
/codon_start=1
/codon_start=1
/codon_start=1
/product='immunoglobulin light chain variable region"
/protein_id="AAD51676.1"
/protein_id="AAD51676.1"
/db_xref="GI:5802420"
/translation="OAUTOPSSVSRSLGQSVSITCSGSSSNVGYGNFVSWYQQVPGS
APKLLIFEATSRASGVPDRFSGSRSGNTATLTIGSLQAEDEADYYCSSYDSSSFVFGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                441.50
4.328
91.892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="abomasal lymph
1. .330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .>330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Newton, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81.081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                                                                       100
                                                                                      84
                                                                                                                                                                                                                                                         50
                                              250
                                                                                                                                                                                                                   150
                                                                                                                             200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bovoidea;
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                        alignment_block:
US-09-786-015-4 x AF172687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block:
LOCUS AF172687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ERSION
                                                                                                                                                                                        Align seg 1/1 to: AF172687
                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101
34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle ::|||:::||||||||||
                                                      51
                                                                                    17
                                                                    GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTCTCCATCACCTGCTCTGGAAGCAGCAGCAACGTTGGATATGGTAATT 100
                                                                                                                       CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAGGTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGAGGCCGATTATTACTGTTCATCTTATGACAGCAGT...AGCTTTGTA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_om:AF172687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutherla; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.

1 (bases 1 to 330)

1 (bases 1 to 330)

White, G.P., Meeusen, E.N.T. and Newton, S.E.

A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          330 bp mRNA linear MAM 29-AUG-:
Ovis aries clone 146 immunoglobulin light chain variable region
(IGLV) mRNA, partial cds.
AF172687
                                                                                                                                                                                                                                                                                                         Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (26-JUL-1999) School of Veterinary Science, for Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     White, G.P., Meeusen, E.N.T. and Newton, S. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished 2 (bases 1 to 330)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sheep.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF172687.1 GI:5802421
                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                53
                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="Aab51677.1"
/protein_id="Aab51677.1"
/db_xref="c1:5802422"
/db_xref="c1:5802422"
/translation="QAVLTQPSSVSRSLGQSVSITCSGSSSNVGYGNFVSWYQQVPGS
/translation="QAVLTQPSSVSRSLGQSVSITCSGSSSNVGYGNFVSWYQQVPGS
APKLLIFEATSRASGVPDRFSGSRSGNTATLTIGSLQAEDEADYYCSSYDSSSFVFGS
                                                                                                                                                                                                                                                                        441.50
4.328
91.892
                                                                                                                                                                                                                                                                                                                                                                                                          GTRLTVLG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <1. .>330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="146"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tissue_type-"abomasal lymph node"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                          from:
                                                                                                                                                                                                                                                                           Percent
                                                                                                                                                                                                                                                                                                                                                                                          90 g
                                                                                                                                                                                          Н
                                                                                                                                                                                                                                                                      Length:
Gaps:
Identity:
                                                                                                                                                                                        to: 330
                                                                                                                                                                                                                                                                                                                                                                                              74 t
                                                                                                                                                                                                                                                                         81.081
                                                                                      34
                                                                                                                      50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MAM 29-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The Centre, Parkville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                   Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151
                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COW.
                     <u>.</u>
```

```
alignment_block:
US-09-786-015-4 x AF015798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
LOCUS AF015798
                                                          Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101 PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACGAGGCCGATTATTACTGTTCATCTTATGACAGCAGT...AGCTTTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTGAAGCAACAAGTCGAGCCTCGGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTGAGCTGGTACCAACAGGTCCCAGGATCAGCCCCCAAACTCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCGGCAGCGGGACCAGGCTGACCGTCCTGGGT 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_om:AF015798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eur. J. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovidae; Bovinae; Bos.

1 (bases 1 to 333)
Saini, S.S., Allore, B., Jacobs, R.M. and Kaushik, A. Exceptionally long CDR3H region with multiple cysfunctional bovine IgM antibodies
Eur. J. Immunol. 29 (8), 2420-2426 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AF015798 333 bp mRNA Bos taurus immunoglobulin light chain va
                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (24-JUL-1997) Pathobiology, University of Guelph, Guelph, ON NIG 2W1, Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 333)
Saini, S.S., Jacobs, R. and Kaushik, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AF015798
AF015798.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10458755
                                                                             Ratio:
                                                                                                                                                                                             64
                                                                                                                                                                                             D
                                                                                                                                                                                                                   GSGTTLTVL"
                                                                                                                                                                                                                                 /translation="QAVLTQPSSVSGSLGQRVSITCSGSSSNVGRGNYVNWFQQIPGS
APRTLIYGATSRASGVPDRFSGSRSGNTATLTISSLQAEDEADYFCAAYDSSSNNAVF
                                                                                                                                                                                                                                                                      /codon_start=1
/product="immunoglobulin light chain
/protein_id="Ash86559.1"
/db_xref="GI:2323386"
                                                        440.50
4.277
92.793
                                                                                                                                                                                                                                                                                                                                                                        antibody
                                                                                                                                                                                                                                                                                                                                                                                        /note="bovine x mouse heterohybridoma secreting IgM
                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                              /clone="BLV6D10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:2323385
                                                                                                                                                                                             106 c
                                                          Percent
                                                                                                                                                                                             95
                                                                                                                                                                                             g
                                                        Identity:
                                                             79.279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NA linear
variable reg
                                                                                                                                                                                                                                                                                                             variable region'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          region mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAM 10-MAR-2000
on mRNA, partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n
```

AF015798

from:

-

ţo:

```
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
LOCUS AF015799
                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name:
                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151
                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101 ATGTGAACTGGTTCCAACAGATCCCAGGATCGGCCCCCAGAACCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ValPheGlySerGlyThrArgLeuThrValLeu 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGAGGCGGATTATTTCTGTGCAGCTATGACAGCAGTAGCAATAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTCTCCATCACCTGCTCTGGAAGCAGCAGCAACGTTGGGCGTGGCAATT 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTTTCGGCAGCGGGACCACACTGACCGTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            spGluAlaAspTyrTyrCysAlaSerTyr...GlnSerThrTyrSerGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATEGTGCGACCAGTCGAGCCTCTGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_om:AF015799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF015799
AF015799.1
                                                                                                                                                                                                                                                                                                                                                                                       Saini, S.S., Allore, B., Jacobs, R.M. and Kaushik Exceptionally long CDR3H region with multiple functional bovine IgM antibodies Eur. J. Immunol. 29 (8), 2420-2426 (1999)
                                                                                                                                                                                                                                                                           Submitted (24-JUL-1997) Pathobiology, ON N1G 2W1, Canada
                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 333)
Saini, S.S., Jacobs, R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos taurus immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF0157
                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                           99387993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                          10458755
                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 333)
               64
               a
                                           /product="immunoglobulin light chain variable region" /protein_id="AAB66570.1" /protein_id="AAB66570.1" /db_xref="GI:2323388" /translation="QAUTOPSSVSGSLGQRVSITCSGSSSNVGRGNYVNWFQQIPGS /translation="QAUTOPSSVSGSLGQRVSITCSGSSSNVGRGNYVNWFQQIPGS APRTLIYGATSRASGVPDRFSGSRSGNTATLTISSLQAEDEADYFCAAYDSSSNNAVF
                                                                                                                                                               antibody
                                                                                                                                                                                                          /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                          /codon_start=1
                                                                                                                                                                          /note="bovine x mouse heterohybridoma secreting
                                                                                                                                                                                             /clone="BLV7F8"
                                                                                                                                                                                                                                                         location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:2323387
                                                                                                                                            .>333
                105
                                                                                                                                                                                                                                                                                                                                                                                                                                       Jacobs, R.M. and Kaushik, A.
               95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                333 bp mRNA linear MAM 10-1
light chain variable region mRNA,
             g
                                                                                                                                                                                                                                                                                                                          Kaushik, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   333
               69
                                                                                                                                                                                                                                                                                          University of Guelph, Guelph,
                                                                                                                                                                                                                                                                                                                                                                                                                      cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAM 10-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
cora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                        residues
                                                                                                                                                                            IgM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                partial
```

```
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
LOCUS AF015801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-786-015-4 x AF015799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: gb_om:AF015801
                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ratio:
Percent Similarity:
                                                                                                                                                                                                                               JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                    JOURNAL
                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151 TATGGTGCGACCAGTCGAGCCTCTGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51 GGTCTCCATCACCTGCTCTGGAAGCAGCAGCAACGTTGGGCGTGGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         spGluAlaAspTyrTyrCysAlaSerTyr...GlnSerThrTyrSerGly
{||||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTTTCGGCAGCGGGACCACACTGACCGTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ValPheGlySerGlyThrArgLeuThrValLeu 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGAGGCGGATTATTTCTGTGCAGCTTATGACAGCAGTAGCAATAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                   Saini, S.S., Jacobs, R. and Kaushik, A. Direct Submission
                                                                                                                                                                                                                                           Saini, S.S., Allore, B., Jacobs, R.M. and Kaushik, A. Exceptionally long CDR3H region with multiple cysfunctional bovine IgM antibodies Eur. J. Immunol. 29 (8), 2420-2426 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF015801 333 bp mRNA linear MAM 10-1
Bos taurus immunoglobulin light chain variable region mRNA,
                                                                                                                                    Submitted (24-JUL-1997) Pathobiology, ON NIG 2W1, Canada
                                                                                                                                                                                                                                                                                                                                                                  Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                COW
                                                                                                                                                                                                                               99387993
                                                                                                                                                                                                                                                                                                                    Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                             AF015801.1 GI:2323391
                                                                                                                                                                                                                                                                                                                                                                                                                               AF015801
                                                                                                                                                                                                             0458755
                                                                                                                                                                                                                                                                                                (bases 1 to 333)
                                                                                                                                                                                              (bases 1 to 333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF015799
                             antibody"
                                           /clone="BLV9H3"
/note="bovine x mouse heterohybridoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            440.50
4.277
92.793
                                                                         /organism="Bos taurus"
/db_xref="taxon:9913"
/codon_start=1
                                                                                                                     Location/Qualifiers
                                                                                                          .
333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111
1
79.279
                                                                                                                                                    University
                                                                                                                                                                                                                                                                         cysteine
                                             secreting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50
                                                                                                                                                    of Guelph,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        MAM 10-MAR-2000
on mRNA, partial
                                                                                                                                                                                                                                                                          residues
                                                                                                                                                                                                                                                                                                                                      Bovoidea;
                                                                                                                                                    Guelph,
```

in

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                  KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-786-015-4 x AF015801
                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
LOCUS AF172688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                   seq_name:
                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
                      JOURNAI
                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlnaspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ValPheGlySerGlyThrArgLeuThrValLeu 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTTTCGGCAGCGGGACCACACTGACCGTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  spGluAlaAspTyrTyrCysAlaSerTyr...GlnSerThrTyrSerGly
||||||||||||||:::||| :::||| :::|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTCTCCATCACCTGCTCTGGAAGCAGCAGCAACGTTGGGCGTGGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGAGGCGGATTATTTCTGTGCAGCGTATGACAGCAGTAGCAATAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGGTGCGACCAGTCGAGCCTCTGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTGAACTGGTTCCAACAGATCCCAGGATCGGCCCCCAGAACCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                               gb_om:AF172688
                                                                  Ovis aries
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Caprinae; Ovis.

1 (bases 1 to 336)
White,G.P., Meeusen,E.N.T. and Newton,S.E.
A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
Unpublished
2 (bases 1 to 336)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quality:
Ratio:
                                                                                                                                                                                                                                                                                                             AF172688 336 bp mRNA linear MAM 29-AUG
Ovis aries clone 23 immunoglobulin light chain variable region
(IGLY) mRNA, partial cds.
white, G.P., Meeusen, E.N.T. and Newton, S.E.
Direct Submission
Submitted (26-JUL-1999) School of Veterinary Science,
for Animal Biotechnology, The University of Melbourne,
                                                                                                                                                                                                                                                    sheep.
                                                                                                                                                                                                                                                                                     AF172688.1
                                                                                                                                                                                                                                                                                                    AF172688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF015801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSGTTLTVL"
a 106 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="immunoglobulin light chain variable region"
/protein_id="AAB65772.1"
/db_xref="G1:2323392"
/translation="QAVLTQPSSVSGSLGQRVSTTCSGSSSNVGRGNYVNWFQQIPGS
APRTLIYGATSRASGVPDRFSGSRSGNTATLTISSLQAEDEADYFCAAYDSSSNNAVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              440.50
4.277
92.793
                                                                                                                                                                                                                                                                                     GI:5802423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                   333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  250
                                                                                                                                                                                                                                                                                                                                                 MAM 29-AUG-1999
 The Centre, Parkville,
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                             seq_documentation_block:
LOCUS AF172693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-786-015-4 x AF172688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                 SOURCE
                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: AF172688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                     251
                                                                                                                                                                                                                                                                                                                                                  201 CAGGCCTGGCCACACAGCGACTCTGACCATCAGCTCACTCCAGGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                         100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTACAGGTCCATGGGCCAGAG
                                                                                                                                                                                                                                          ValPheGlySerGlyThrArgLeuThrValLeuGly
                                                                                                                                                                                                                                                                                                    spGluAlaAspTyrTyrCysAlaSerTyr...GlnSerThrTyrSerGly
                                                                                                                                                                                                                          GTTTTCGGCAGCGGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                     ACGAGGCCGATTATTACTGTGCGTCTTATGACAGCAGTACTCTTAATGGT
                                                                                                                                                                                                                                                                                                                                                                               rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTGACCTGGTACCAACAGGTCCCCAGGATCAGCCCCCAAATTCCTCATT
                                                                                                                                                                                           gb_om:AF172693
                               sheep.
Ovis aries
                                                                                                          Ovis aries clone 64 immunoglobulin (IGLV) mRNA, partial cds.
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea
                                                                                AF172693.1
                                                                                                AF172693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Melbourne, Victoria 3052, Australia
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="Amad51678.1"
/db_xref="01:5802424"
/translation="QAVLTQPSSVYRSMGQSVSITCSGSSSNVGYGNYVTWYQQVPGS
APKFLIYGATNRASGVPDRFSGSRPGHTATLTISSLQAEDEADYYCASYDSSTLNGVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="IGLV"
<1. .>336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                439.50
4.351
90.179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GSGTRLTVLG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tissue_type="abomasal lymph node"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90 g
                                                                                                                                             333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Gaps:
: Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77
                                                                                                                                                                                                                                                      111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H
                                                                                                                            mRNA linear
light chain var
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   79
                                                                                                                                variable
                                                                                                                                                                                                                                                                                                                    99
                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                  250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17
                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                            MAM 29-AUG-1999
ble region
```

Bovoidea

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_block:
US-09-786-015-4 x AF172693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: AF172693 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
             101 PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                             251
                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
301 TTCGGCAGCAGGACCAGGCTGACCGTCCTGGGT 333
                                                                                           84
                                                                                                                                                                                                                                                                                                                         51
                                                                                                                                                                                                                                                                                                                                     17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                                                                                                                                                                                                                                                                                                                                                                      1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr 17
                                                          GGTCTCCATCACCTGCTCTGGAAGCAGCGACAACGTTGGATATGGTAATA 100
                                                                                                                                                                                                                                                                                                                                                                                       CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCAAGTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovidae; Caprinae; Ovis.

1 (bases 1 to 333)

White,G.P., Meeusen,E.N.T. and Newton,S.E.

A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (26-JUL-1999) School of Veterinary Science, The Centre for Animal Biotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 333)
White, G.P., Meeusen, E.N.T. and
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SRTRLTVLG"
a 101 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="immunoglobulin light chain variable region"
/protein_id="AD51683.1"
/protein_id="AD51683.1"
/db_xref="G1:5802434"
/translation="QAVLTQDSSVSKSLGQRVSITCSGSSDNVGYGNNVGWYQQVPGS
APKLLIYGATRRASGYPDRFSGSRSGNTATLTISSLQAEDEADXYCAFYDHGSWGVFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="64"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  439.00
4.480
88.288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IGLV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="abomasal lymph node"
L. .333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .>333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length: 111
Gaps: 0
Percent Identity: 81.081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Newton, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73 t
                                                                                                                                                                                                                                                        150
                                                                                                                                                                                                                                                                                                                                                                                      50
                                                                                                                                                                                         200
                                                                                                                         250
```

```
Query leng
Database:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database: N_Geneseq_032802:*
Database sequences: 1736436
Database length: 858457221
Search time (sec): 373.090000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          윷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -Q-/G9n2_1/USPTO_Spool/US09786015/runat_12082002_092423_77/app_query.fasta_1.347
-QB=N_Geneseq_032802 -QFMM=fastap -SUFFIX=p2n.rng -GAPOP=12.000
-GAPEXT=4.000 -MINMATCH=0.100 -LOOPCLT-0.000 -XGAPEXT=0.000
-QAPEDP4.500 -QGAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-FGAPOP-6.000 -FGAPEXT-7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-DELOP=6.000 -DELEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-DELOP=6.000 -DELEXT=7.000 -START=1 -MATRIX-blosum62
-TRANS=human40.cd1 -LIST=45 -DOCALIGN=200 -THR_SCORE-pct
-THR_MAX=100 -THR_MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFMT=pfs
-NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000
-USER-US09786015_eCGN1_1_575 -NCDU=6 -ICPU=3 -LONGLOG
-COSER-US09786015_eCGN1_1_575 -NCDU=6 -ICPU=3 -LONGLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEV_TIMEOUT-120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MODEL-frame+_p2n.model -DEV-xlp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of: US-09-786-015-4 to: N_Geneseq_032802:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length: 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              information block: US-09-786-015-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Results were |
Copyright (c)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2002 10:46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -WARN_TIMEOUT=30 -NO_XLPXY -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              produced by
) 1993-2000 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the GenCore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            software,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   out_format :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            version
                                                                                                                                                                                                       646.31
651.74
651.74
650.94
639.94
639.94
648.64
648.64
648.96
644.91
634.96
634.96
634.96
634.96
634.96
634.96
634.62
634.62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660.41
655.42
635.30
632.79
632.79
660.35
658.40
658.10
655.92
653.44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            963
                                           1.0e-26
4.2e-27
4.2e-27
                                                                                                                                           1.2e-27

1.5e-27

2.5e-28

4.5.9e-28

4.5.9e-28

1.5e-27

2.7e-27

2.7e-27

3.1e-27

1.4e-27

1.4e-27

3.1e-27

1.4e-27

1.4e-27

1.4e-27

1.4e-27

2.7e-27

2.7e-27

3.1e-26

5.1e-27

1.8e-27

1.8e-27

1.9e-27

2.7e-27

3.1e-27

3.1e-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.5e-28
4.7e-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6.7e-27
6.7e-27
2.0e-28
2.5e-28
2.6e-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2.4e-45
                   7 38 324
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 338
7 3
```

alignment_block: US-09-786-015-4 x AAA08401

Align

seg

1/1

ن

AAA08401

from:

. 0:

50 17 alignment_scores: Quality:

Percent Similarity:

Ratio:

564.00 5.081 100.000

Percent

Gaps: 0
Identity: 100.000

Length:

103

ü

94 ç;

70

Η; 0

```
seq_documentation_block:
ID AAA08401;
XX AAA08401;
XX AAA08401;
XX IJ 13-JUL-2000 (first entry)
XX Carcinoembryonic antigen;
XX Carcinoembry;
XX Carcinoembryonic antigen;
XX Carcinoembry;
XX Carcinoembr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:AAX86941 - 372.00
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001a.DAT:AAH42399 + 371.00
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:AAS77074 + 371.00
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:AAS28996 + 370.50
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:AA228997 + 370.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT:AAA08401
                                                                                                                The present invention describes a high-affinity monoclonal antibody characterised by an acid-washed enzyme-linked immunosorbent assay (EIA). The antibody is used in cancer therapy. Association of the new antibody with an antigen is favoured over dissociation in vivo and they therefore have longer localisation times at target sites, resulting in a higher concentration of antibodies localised at the target sites. Targeting the antibody to a site in vivo is improved. The concentration of antibody does not need to be too high which reduces side-effects and costs of therapy. The present sequence encodes the light chain variable region of a monoclonal antibody having affinity for carcinoembryonic antigen (CEA, a tumour associated antigen), which is used in the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Carcinoembryonic antigen; CEA; sheep; monoclonal antibody; tumour associated antigen; anti-carcinogenic; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Carcinoembryonic antigen affinity antibody light chain variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-JUL-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            new high-affinity monoclonal antibody that is characterized id-washed enzyme-linked immunosorbent assay for use in cance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9; Page 15; 21pp; English.
                                                                                       present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98GB-0018915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-GB02729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rized by cancer t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          629.43
634.68
628.95
626.99
626.90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        y an
therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.4e-26
1.4e-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.0e-26
5.3e-27
1.1e-26
```

```
seq_documentation_block:
ID AAI58663 standard; cD
XX AAI58663;
AC AAI586663;
AC AAI58663;
AC AAI586663;
AC AAI58663;
AC AAI586663;
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:AAI58663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzhelmer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemotinetic; thrombolytic; drug screening; arthritis; inflammation; composite the contraction of the contraction of the contraction of the contraction of the contraction; chemotinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                       Novel nucleic acids and such as central nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAI58663 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PheGlySerGlyThrArgLeuThrValLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTGGGCTGGTACCAACAGGTCCCAGGATCAGCCCCCAGACTCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCGGCAGCGGGACCAGGCTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTGCTACAACCGATCGAGCCTCGGGGATCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGAGGCCGATTATTACTGTGCATCGTATCAAAGTACTTACAGTGGTGTT
                                                                                                                                                                   2001-442253/47.
DB; AAM39507.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polynucleotide SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                      ; 2000US-0488725.
; 2000US-0552317.
; 2000US-0598042.
; 2000US-0620312.
; 2000US-0653450.
; 2000US-0652191.
; 2000US-0693036.
; 2000US-07273444.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                     Asundi V, Che
Wehrman T, Xt
                                   866;
                                10078pp;
                                                                                    polypeptides, useful for treating
system injuries -
                                                                                                                                                                                                                                                                      Chen R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          866.
                                                                                                                                                                                                                                                Drmanac
                                   English
                                                                                                                                                                                                                                                                      Ma
Xue
                                                                                                                                                                                                                                     e AJ,
                                                                                                                                                                                                                                                                      Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                                                                                                                                                                                                                      Zhang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        250
                                                                                                                                                                                                                                                                                              Ren F,
                                                                                                               disorders
                                                                                                                                                                                                                                                                        ij
                                                                                                                                                                                                                                                                                              Wang
                                                                                                                                                                                                                                                                                                 Ď
```

```
seq_documentation_block:
ID AAC66525 standard; cC
XX
AC AAC66525;
XX
T 15-FEB-2001 (first e
XX
DE Human immune system a
XX
Human; immune system a
XX
KW infection; autoimmune
XX
OS Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:AAC66525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-786-015-4 x AAI58663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polypucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and thempay, drug screening, and thrombolytic activity, cancer diagnosis and thempay, drug screening, and serve for the containing the server of the server of the containing the containing the containing the server of the containing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Note: The sequence data specification.
                                                                                                                                             Human immune system associated protein HISAP-7 coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           124 CAGTCTGTGCTGACGCAGCCGCCCTCAGTGTCTGGGGGCCCCAGGGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 585 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    assays
                                                               infection; autoimmune disease; cancer; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N.S disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ...ValPheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTACACTGGTACCAGCAACTTCCAGGAACAGCCCCCAAACTCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAGGCTGATTATTACTGCCAGTCCTATGACAGCAGCCTGAGTGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGly...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGTCTGGCACCTCAGCCTCCCTGGCCATCACTGGGCTCCAGGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGGTAACAGCAATCGGCCCTCAGGGGTCCCTGACCGATTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTCACCATCTCCTGCACTGGGAGCAGCTCCAACATCGGGGCAGGTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGTATTCGGCGGAGGGACCAAGCTGACCGTCCTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for receptor activity, arthritis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ratio:
                                                                                                                                                                                                    (first entry)
                                                                                         system associated protein; HISAP-7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAI58663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        389.00
3.814
90.265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             113
                                                                                                                                                                                                                                                                                                                  cdna;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             194
                                                                                                                                                                                                                                                                                                                  935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for this patent did
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           not form part of the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0 other;
                                                                                            immune disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        173
```

```
alignment_block:
US-09-786-015-4 x AAC66525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to: AAC66525
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention provides the coding and protein sequences for a number of human immune system associated proteins (HISAPS). These can be used in the diagnosis and treatment of various autoimmune disorders, infections and cell proliferation diseases. The diseases include AIDS, adult respiratory distress syndrome, anaemia, asthma, atheroscierosis, myasthenia gravis, osteoarthritis, rheumatoid arthritis, scleroderma, systemic lupus
                                                                                                331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 3; Column 83-84; 54pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hillman JL,
                                                                                                                                                        281
                                                                                                                                                                                                                 231
                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                               131 CAGTCTGTGCTGACGCAGCCGCCCTCAGTGTCTGGGGCCCCCAGGGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        erythematosus, arteriosclerosis, cirrhosis and cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New human immune system associated proteins (HISAP) and polynucleotides encoding the HISAP, useful for diagnosing, treating or preventing immune or cell proliferative disorders or infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (INCY-) INCYTE PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24 -OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US6135941-A.
                                                                                                                                                                                                                                            34
                                                                    84
                                                                                                                           67
                                                                                                                                                                                   51
                                                                                                                                                                                                                                                                                                    17
                                                                                                                                                                                                                              GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                   gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
ValPheGlySerGlyThrArgLeuThrValLeuGly 111
                                        ATGAGGCTGATTATTACTGCCAGTCCTATGACAGCAGCCTGAGTGGTGTG
                                                        CAAGTCTGGCACCTCAGCCTCCCTGGCCATCACTGGGCTCCAGGCTGAGG
                                                                                                               rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                        TATGGTAGTAGAAATCGGCCCTCAGGGGTCCCTGACCGATTCTCTGGCTC
                                                                                                                                                                      SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                               ATGTACACTGGTACCAGCAGCTTCCAGGAACAGCCCCCAAACTCCTCATC
                                                                                                                                                                                                                                                                        GGTCACCATCTCCTGCACTGGGAGCAGCTCCAACATCGGGGCAGGTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-030926/04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yue H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Au-Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0049672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0049672
                                                                                                                                                                                                                                                                                                                                                                                                                                                          388.50
3.847
90.179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             216 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ď, 'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299 C;
                                                                                                                                                                                                                                                                                                                                                                                       from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Corley NC,
                                                                                                                                                                                                                                                                                                                                                                                       ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             248
                                                                                                                                                                                                                                                                                                                                                                                      ço:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G; 172 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Guegler KJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          67.857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Baughn
                                                                    99
                                                                                                                         84
                                                                                                                                                                                     67
                                                                                                                                                                                                                                          50
                                                                                                                                                                                                                                                                        230
                                                                                                                                                                                                                                                                                                   34
                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                       330
                                                                                                                                                                                                               280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MR
```

```
seq_documentation_block:
ID AAS77073 standard; ccl
XX
AC AAS77073;
XC AAS77073;
XY 13-FEB-2002 (first e
XX DNA encoding novel hu
XX DNA encoding novel hu
XX Human; chromosome map
KW Human; chromosome map
KW Homo sapiens.
XX Homo sapiens.
XX 11-OCT-2001; 2001WO-U
XX 30-MAR-2000; 2000US-C
PR 31-MAR-2000; 2000US-C
PR 23-AUG-2000; 2000US-C
PR 23-AUG-2000; 2000US-C
XX 11-OCT-2001.
XX 11-OCT-2001.
XX AND 11-OCT-2001.
XX 11-OCT-2001.
XX NOW 11-OCT-2001.
XX 11-OCT-2001.
XX 11-OCT-2001.
XX 11-OCT-2001.
XX 11-OCT-2001.
XX 20-MAR-2000; 2000US-C
XX 20-MAR-2000; 2000US-C
XX 21-MAR-2000; 2000US-C
XX 22-MAR-2000; 2000US-C
XX 23-MAR-2000; 2000US-C
XX 23-
alignment_block:
US-09-786-015-4 x AAS77073
                                                                                                                                                                                                                                                         alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cc polypeptide (II) sequences. (I) is useful as hybridisation probes, cc polymerase chain reaction (PCR) primers, oligomers, and for chromosome cc and gene mapping, and in recombinant production of (II). The cc and gene mapping, and in recombinant production of (II). The cc polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques (II). (II) is useful for generating antibodies against it, detecting or cc quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical cmaging of sites expressing (II). (I) and (II) are useful in medical company of sites expressing (II). (I) and (II) are useful for treating cc disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in cc diagnostics, forensics, gene mapping, identification of mutations company in the polypeptide other types of data and products dependent on DNA and call amino acid sequences. AAS64197-AAS94564 represent novel human cc antino acid sequences of the invention.

CC Note: The sequence data for this patent did not appear in the printed content of the product of the printed of the product of the company in the printed content of the printed of the pri
                                                                                                                              Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutation responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31-MAR-2000; 2000US-0540217
23-AUG-2000; 2000US-0649167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAS77073 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to isolated polynucleotide (I) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; SEQ ID No 12877; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA encoding novel human diagnostic protein #12877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:AAS77073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chromosome mapping; gene mapping; gene therapy; forensic;
upplement; medical imaging; diagnostic; genetic disorder; ss
                                                                                                                                                                                                                  Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                              387.00
3.909
89.189
                                                                                                                                                                                                                                                                                                                                                                                    200 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tang
                                                                                                                                                                                                                                                                                                                                                                               293 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    889
                                                                                                                                   Percent
                                                                                                                                                                                                                                                                                                                                                                                    223 G;
                                                                                                                              Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                        173 T;
                                                                                                                              111
0
65.766
                                                                                                                                                                                                                                                                                                                                                                                        0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mutations
```

Align seg 1/1 to: AAS77073

from:

ب

to: 889

101 CAGTCTGCCCTGACTCAGCCTCCCTCCGCGTCCCGGGTCTCTTGGACAGTC 150

GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr

17

Н

```
seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1992.DAT:AAQ22491
B cell deficient transgenic non-human animals - comprise DNA encoding the U266 immunoglobulin light chain and an enhancer region used as models of B cell deficiency
                                                 WPI; 1992-114348/14.
                                                                                                                                                                                          W09204440-A
                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                         Chimeric
                                                                                                                                                                                                                                                                                                                                   Chimeric Homo sapiens
                                                                                                                                                                                                                                                                                                                                                       Human myeloma U266 cell line; rearranged lambda gene; Ig; immunoglobulin light chain; pTAR-7; heavy chain enhancer; humoral immunity; transgenic mouse; ATCC No. 72003; ds.
                                                                                                                                                                                                                                                                                                                                                                                                         Human
                                                                                                                                                                                                                                                                                                                                                                                                                              31-JUL-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAQ22491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAQ22491 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151
                                                                         Vasicek TJ,
                                                                                                                       29-AUG-1990;
                                                                                                                                             27-AUG-1991;
                                                                                                                                                                     19-MAR-1992
                                                                                                (HARD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PheGlySerGlyThrArgLeuThrValLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGAGGTCACTAAGCGGCCCTCAGGGGTCCCTAACCGCTTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
||||||:::||||||:::|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTCACCTTCTCCTGCAGTGGAACCAGCAGTGACATTGGTAATTATAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCGGCGGAGGGACCAGGCTGACCGTCCTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGAGGCTGATTATTACTGCAGCTCATACGCAGGCAGTAATAGTTTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTCTCCTGGTACCGACAACACCCAGGCAAAGCCCCCAAACTCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                      U266 lambda gene
                                                                                                HARVARD COLLEGE
                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                         Leder P;
                                                                                                                      90US-0575005
                                                                                                                                             91WO-1006124
                                                                                                                                                                                                                                                /*tag= a
/note= "U266-lambda gene"
8386..9071
                                                                                                                                                                                                             /note= "portion of 995bp XbaI-EcoRI fragment
pTAR-7 contg. mouse H chain enhancer"
                                                                                                                                                                                                                                                                                     Location/Qualifiers
1..8385
                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34
                                                                                                                                                                                                                            of
```

```
seq_documentation_block:
ID AAQ23370 standard; DN
XX
AC AAQ23370;
XX
DT 14-AUG-1992 (first e
XX
DT 14-AUG-1992 (first e
XX
Chambda-E-mu; rearrang
KW Lambda-E-mu; rearrang
KW B cell deficiency; cc
KW ATCC # 72003; ds.
XX
OS Chimeric Mus.
OS Chimeric Homo sapiens
XX
PN W09204443-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-786-015-4 x AAQ22491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
   Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1992.DAT:AAQ23370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5490
                                                                                                                                                                                                                                                                                                                                                                         5740
                                                                                                                                                                                                                                                                                                                                                                                                                                            5690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5440 CAGTCTGCCCTGACTCAGCCTCCCTCCGCGTCCGGGTCTCTTGGACAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     heavy chain enhancer. The resulting transgene was used in the production of transgenic mice in which the proportion of spleen celwhich are mature B cells is not more than a quarter of that in wild-type animals. The animals are more susceptible to infectious diseases than the wild-type and are models for severe B cell deficiency. See also AAQ22489 for the transgene sequence.
                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This sequence is the EcoRI/HindIII fragment of the rearranged lambda gene isolated from human myeloma U266 cell line ligated to the mouse
                                                                                                                                                                           U266-Lambda gene and downstream murine Ig
                                                                                                                                                                                                                                                                                    AAQ23370 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 9071 BP; 2196 A; 2395 C; 2321 G; 2159 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Fig 7; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCGGCGGAGGGACCAGGCTGACCGTCCTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                          PheGlySerGlyThrArgLeuThrValLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAGGCTGATTACTGCAGCTCATACGCAGGCAGTAATAGTTTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGAGGTCACTAAGCGGCCCTCAGGGGTCCCTAACCGCTTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTCTCCTGGTACCGACAACACCCCAGGCAAAGCCCCCAAACTCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTCACCTTCTCCTGCAGTGGAACCAGCAGTGACATTGGTAATTATAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ratio:
                                                                                                                                                                                                              (first entry)
                                                                                                                          rearranged; immunoglobulin;
iency; common variable immuno
                                                        sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAQ22491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 387.00
3.909
89.189
                                                                                                                                                                                                                                                                                    9071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               е
6
                                                                                                                          immunodeficiency;
                                                                                                                                                                                                                                                                                                                                                                                                          111
                                                                                                                                                                                                                                                                                                                                                                         5772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9071
                                                                                                                                                                           Heavy chain enhancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111
0
65.766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cells
```

```
alignment_block:
US-09-786-015-4 x AAQ23370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to: AAQ23370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
5740
                                                                                                                                                                                                     5590
                                                                                                                                                                                                                                                                                                                                                                                                         5440 CAGTCTGCCCTGACTCAGCCTCCCGCGTCCGGGTCTCTTGGACAGTC
                                                                                                                                  5640
                                                                                                                                                                                                                                                                       5540 ATGTCTCCTGGTACCGACAACACCCAGGCAAAGCCCCCAAACTCATGATC
                                                                                                                                                                                                                                                                                                                                      5490 AGTCACCTTCTCCTGCAGTGGAACCAGCAGTGACATTGGTAATTATAATT 5539
                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         XS1754). The lambda-E-mu construct was prepared by cutting the lambda construct at the HindIII site 0.9kb downstream of C(lambda)2. The fragment was blunt-ended and ligated to a 995bp XbaI fragment of pTAR-7 containing the mouse Ig heavy chain enhancer. The transgene construct was used to transfect mouse cells for the production of B cell deficient transgenic mice. The mice can be used to study e.g. X-linked agammaglobulinemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B cell deficient transgenic FVB/N mice - comprise DNA encoding the lambda light chain of a non-human animal for modelling of cell deficiency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 9071 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     with EcoRI and containing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA from the IgE-lambda human myeloma U266 cell line was digested
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 7; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1992-114351/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vasicek TJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 with EcoRI and used to prepare a phage library. The clone containing the active lambda gene was identified by probing the library with a radiolabelled BanHI fragment of the human lambda gene. (The complete sequence of U266-lambda gene has EMBL Acc.#
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HARD ) HARVARD COLLEGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-AUG-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-AUG-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19-MAR-1992
                                                                                                                                                                    67
                                                                                                 84
                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                      34
                                                                                                                                                                                                                                                                                                                                                                        17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr 17
                                                                                 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
                 PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                  CAAGTCTGGCAACACGGCCTCCCTGACCGTCTCTGGGCTCCAGGCTGAGG
                                                                                                                                                    rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                                                 ATGAGGCTGATTATTACTGCAGCTCATACGCAGGCAGTAATAGTTTGATT
                                                                                                                                                                                                    TATGAGGTCACTAAGCGGCCCTCAGGGGTCCCTAACCGCTTCTCTGGCTC
                                                                                                                                                                                                                       SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Leder P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 90US-0575006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91WO-US06106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              387.00
3.909
89.189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2196 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2395 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to: 9071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2321 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2159 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111
: 0
: 65.766
                                                                                                                                  5689
                                                                                                                                                                                                    5639
                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                     5589
                                                                                                                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                                                                                                                                        34
                                                                                                                                                                                                                                                                                                                                                                                                         5489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
```

seq_name: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:AAS03520

```
seq_documentation_block:
ID AAS03520 standard; cD
XX
AC AAS03520;
XX
AC AAS03520;
XX
29-AUG-2001 (first e
XX
DNA encoding anti-adi
XX
Antibody; adipocyte;
KW heart disease; comple
XX
Homo sapiens.
XX
W0200127279-Al.
XX
19-APR-2001.
YX
11-OCT-1999; 99US-0
XX
CAMB-) CAMBRIDGE ANT
XX
HOMOSADIAN Main SH,
XX
CAMB-) CAMBRIDGE ANT
XX
Edwards BM, Main SH,
XX
DR
WPI; 2001-282031/29.
PR
PSDB; AA0U2620.
XX
PAN (CAMB-) CAMBRIDGE ANT
XX
DR
WPI; 2001-282031/29.
PR
Panel of specific bir
YMO1e adipocytes is unitable diseases -
XX
DR
DR
PAN HOLE Adipocytes is used in the treatment
CC antibodies can be used and light chain codir
CC antibodies can be used antibodies can be used antibodies can be used antibodies can be used antibodies can the surface codir antibodies can be used antibodies can be used antibodies can the surface codir antibodies can be used antibodies can be used antibodies can be used antibodies can be used codirectivate the immune second codirect
                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-786-015-4 x AAS03520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_scores:
Quality:
                                                                                                                                                                                                                                                                     Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AASO3401-AASO3535 represent anti-adipocyte monoclonal antibody heavy and light chain coding sequences of the invention. The antibodies can be used in the treatment of obesity and obesity related diseases. The antibodies can be used to deliver drugs or pro-drugs directly to the fat mass of an obese patient or the antibody can be used as a therapeutic itself. Antibodies binding specifically to adipocytes can be used to activate the immune system to destroy the cells by complement mediated lysis. The antibodies may be labeled with a detectable label such as radiolabel, fluorescent or chemical group and used in methods of diagnosis in human subjects e.g. to determine the presence of adipocyte antipodies can be used as a cell or tissue sample. The antibodies can be used as a cell or tissue sample. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antibodies can be used as an alternative means of treatment for obese patients other than undergoing surgery to remove excess fat. Antibodie for different types of fat deposits can also be produced e.g. intra-abdominal fat associated with heart disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        whole adipocytes is used in the treatment of obesity and obesity related diseases - ^{ullet}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAS03520 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 167; 182pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Panel of specific binding members of antibody molecules which bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CAMB-) CAMBRIDGE ANTIBODY TECHNOLOGY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-OCT-2000; 2000WO-GB03900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Antibody; adipocyte; heavy chain; light chain; obesity; heart disease; complementarity determining region; CDR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA encoding anti-adipocyte monoclonal antibody light chain, FAT 106.
                               17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT ::::::||||:::||||:::||
51 GATCACCATCTCCTGCACTGGAACCAGCAGTGACGTTGGTGGTTATAACT
                                                                                                                               1 CAGTCTGTGCTGACTCAGCCTGCCTCCGTGTCTGGGTCTCCTGGACAGTC
                                                                                                                                                                                               1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                     AAS03520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9908-0158812
                                                                                                                                                                                                                                                                                                                                                                                                                                     386.00
3.979
88.182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vaughan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           330
                                                                                                                                                                                                                                                                  from:
                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                                                                                                                                                                                                     G;
                                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77
                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                        65.455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            110
0
   100
                                                                                                                               50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fat. Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ç
```

```
alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _documentation_block:
AAH47733 standard;
                                                                                    a functional conformation, producing a gene library comprising collection of these light chain variable genes, and combining volumerary of heavy chain variable genes. The method is used for pof gene and antibody libraries.
                                                                                                                                 The invention relates to producing gene libraries, comprising immunoglobulin light and heavy variable region. The method involves selecting light chain that binds with the heavy chain product to produce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gene
                                                                                                                                                                                                                        Producing gene libraries and antibody libraries, involves selecting a light chain that binds to a heavy chain product to produce a functional formation, and producing a gene library of the light chain variable
                                                                                                                                                                                                                                                                                                              Kurosawa Y, Akahori
Okuno Y, Shiraki K;
                                                                                                                                                                                                                                                                                                                                                                                                                            30-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200162907-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleotide sequence of seq Id
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAH47733;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                                                            P-PSDB;
                                                                                                                                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                                                                                                                                                             22-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                    22-FEB-2001; 2001WO-JP01298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                             Sequence
                                                                                                                                                                                      Examples; p 150; 181pp; Japanese
                                                                                                                                                                                                                                                                                                                                                  (MEDI-) MEDICAL & BIOLOGICAL LAB CO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           spG1uAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal
|||||||||||||||||||:::||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PheGlySerGlyThrArgLeuThrValLeu 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAGGCTGATTATTACTGCAGCTCATATGCAGGCAACGACAGTGTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAGTCTGGCAACACGGCCTCCCTGACCGTCTCTAGACTCCAGGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGAGGTCAATAAGCGCCCCTCAGGGGTCCCTGATCGCTTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTCTCCTGGTACCAACAGCACCCAGGCAAAGCCCCCAAACTCATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCGGCGGAGGGACCAAGCTGACCGTCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  library; immunoglobulin;
                                                                                                                                                                                                                                                                                        2001-565420/63.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:AAH47733
                                                                                                                                                                                                                                                                              AAG65569
                                                             339
                                                             B₽;
                                                                                                                                                                                                                                                                                                                            Akahori
                                                                                                                                                                                                                                                                                                                                                                           2000JP-0050543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first
                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA;
                                                             Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry)
                                                                                                                                                                                                                                                                                                                            ۲
                                                             104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   339
                                                                                                                                                                                                                                                                                                                            Iba
                                                             Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВÞ
                                                                                                                                                                                                                                                                                                                            Υ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No.
                                                             95
                                                             G;
                                                                                                                                                                                                                                                                                                                            Morino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76.
                                                             73
                                                             Τ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  library;
                                                             0
                                                             other;
                                                                                                                                                                                                                                                                                                                           Shinohara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human;
                                                                                               combining with gene sused for production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ds
                                                                                                                                                                                                                                                                                                                           Takahashi
                                                                                                                                                                                                                                                                                                                         ×
```

385.00 3.812

Length: Gaps:

```
seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-786-015-4 x AAH47733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
        New fusion protein, useful for diagnosis of diabetes type I and metabolic diseases, is reactive with autoantibodies against both glutamate decarboxylase and islet cell antigen
                                                                                                                                                                                                                                                                                                        Autoantigen; fusion protein; islet cell antigen; MICA autoantibody; glutamate decarboxylase; diabetes mellitus type I; stiff-man syndrome; polyglandular autoimmune syndrome; autoimmune disorder; IA2; GAD65; variable region; heavy chain; MICA-6; ds.
                                                                                                                                                                                                                                                                                                                                                                            Human
                                                                                                                                                                                                                                                                                                                                                                                                                                  AA168765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101
                                                              WPI; 2001-640702/74.
P-PSDB; AAG80216.
                                                                                                                                                           10-APR-2000;
25-MAY-2000;
                                                                                                                                                                                                  29-MAR-2001;
                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                       22-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA168765
                                                                                                                                                                                                                            31-OCT-2001
                                                                                                                                                                                                                                                       EP1149914-A2
                                                                                                      Richter W,
                                                                                                                                (LABO-) LABOR KOCH MERK GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGTATTCGGCGGAGGGACCAAGCTGACCGTCCTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ...ValPheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGly...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTCTGGCACCTCAGCCTCCCTGGCCATCACTGGGTTCCAGGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATEGTAACAGCAATCGGCCCTCAGGGGTCCCTGACCGATTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SeralaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTACACTGGTACCAGCAGCTTCCAGGAACAGCCCCCAAACTCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTCACCATCTCCTGCACTGGGAGCAGCTCCAACATCGGGGCAGGTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGCTGTGCTCACTCAGCCGTCCTCAGTGTCTGGGGTCCCAGGGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGAGGCTGATTATTACTGCCAGTCCTATGACAGCAGCCTGAGTGGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:AAI68765
                                                                                                                                                                                                                                                                                                                                                                           autoantibody MICA-6 variable region heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                       Rickert
                                                                                                                                                           2000DE-1017782
2000DE-1025840
                                                                                                                                                                                                   2001EP-0107702
                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAH47733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89.381
                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA;
                                                                                                      Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                            351
                                                                                                      Rapp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Identity: 67.257
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                      Ħ
                                                                                                      Dangel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        339
                                                                                                       Σ
                                                                                                                                                                                                                                                                                                                                                                           chain
                                                                                                                                                                                                                                                                                                                                                                            DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50
                                     other
```

Disclosure; Page 34; 68pp; German.

```
seq_documentation_block:
ID AAC96953 standard; DN
XX
AC AAC96953;
XX
DT 22-FEB-2001 (first &
XX
DE Human anti-HBs antibo
XX
KW Anti-hepatitis B monc
KW antiinfiammatory; heg
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:AAC96953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention describes a novel fusion protein (I) that has, at its CC N-terminus, one or more epitopes that bind specifically to autoantibodies CC (AAb) against the islet cell antigen IA2 and, at its C-terminus, one or CC more epitopes that bind specifically to antibodies (Ab) directed against the glutamate decarboxylase GAD65. (I), also nucleic acid (II) encoding CC it, vectors containing (II) and transformed cells, are useful for CC diagnosis and prognosis of diabetes mellitus type 1, stiff-man syndrome, CC polyglandular autoimmune syndrome or other autoimmune conditions CC associated with Aab against GAD65 or IA2. (I) provides a rapid and simple CC diagnosis of high specificity and sensitivity, capable of recognizing CC antibodies against both IA2 and GAD65, simultaneously. Unlike known CC fusions, where the GAD65 component is at the N-terminus, (I) contains CC correctly folded conformational epitopes that can react with most MICA CC autoantibodies. This sequence encodes the human autoantibody MICA-6 variable region heavy chain used in the method of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-786-015-4 x AAI68765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: AAI68765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125
                                                 Anti-hepatitis B monoclonal antibody; human; hepatitis B; prevention;
                                                                                           Human anti-HBs antibody light chain DNA fragment SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                             103
                                                                                                                                                                                                                                                                                                                                                                                                                                         275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 351 BP; 68 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19 rIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaTyrValG 36
    :|||:::|||:::|||:::|||||::::|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25
                                                                                                                                                                                                                                                                                                                                                                        SerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   laAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyValPheGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCACTAAGCGGCCCTCAGGGGTCCCTGATCGCTTCTCTGGCTCCAAGTC 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIleSerAla 52
                                                                                                                                                                                                                                                                                                                                                GGAGGGACCAAGCTGACCGTCCTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGATTATTACTGCACCTCATATGCAGGCAGCAACAATTTGGTGTTCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluAspGluA 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnArgValSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySerArgSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTGGTACCAACAGCACCCAGGCAAAGCCCCCAAACTCATGATTTTTGAG 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATCTCCTGCACTGGAACCAGCAGTGACGTTGGTGGTTATAACTATGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ratio:
                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              385.00
4.010
88.073
                            hepatotrophic; ds
                                                                                                                                                                                                                                 DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109 C; 95 G; 79 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Identity:
                                                                                                                                                                                                                                                                                                                                                351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
O:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66.055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             74
```

```
alignment_block:
US-09-786-015-4 x AAC96953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention relates to a human anti-hepatitis B monoclonal antibody. Included in the invention are polynucleotide sequences AAC96948 - AAC96955 which encode fragments of the heavy and light chains of the antibody. Proteins and peptides represented by sequences AAB52185 - AAB52210 are fragments of the anti-hepatitis B light and heavy chains. Also included in the invention are PCR primers AAC96975 - AAC96977 which are used in the construction of the antibody. The antibody exhibits antiinflammatory, and hepatotrophic activity, and can be used in a drug effective at preventing hepatitis B infection.
 301
                                                      251
                                                                                                             201
                                                                                                                                                                   151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel anti-hepatitis B hepatitis B
                           100
                                                                                                                                                                                                                         101 ATGTACAGTGGTATCAGCAGCTTCCAGGAACAGCCCCCAAACTCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 336 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Page 17-18; 27pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAB52208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (NISN ) NISSHINBO IND IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JP2000253878-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                 84
                                                                                                                                      67
                                                                                                                                                                                             51
                                                                                                                                                                                                                                                 34
                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                             51 GATCAGCATCTCCTGCATTGGGAGTAGTTCCAATATCGGGGCAGGTTATG
                                                                                                                                                                                                                                                                                                                                  gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
|:::||||||::::||
              ValPheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
GTCTTCGGAAGTGGGACCACGGTCACCGTCCTAGGT
                                                                  rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                      ATGAGGCTGATTATTACTGCCAGTCCTATGACAGTAGCCTGAGTGGTTAT
                                                                                                            CAAGTCTGGCACCTCAGCCTCCCTGGACATCACTGGGCTCCAGGCTGAGG
                                                                                                                                                                   TTTGTTAACATCAATCGGCCCTCAGGGGTCCCTGACCGATTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000-675345/66.
                                                                                                                                                                                                                                                                                                                                                                                           AAC96953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99JP-0061930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99JP-0061930
                                                                                                                                                                                                                                                                                                                                                                                                                                                            383.50
3.913
87.500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; 97 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       monoclonal antibody used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ဗ
                                                                                                                                                                                                                                                                                                                                                                                           from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             92 G;
                                                                                                                                                                                                                                                                                                                                                                                           .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                           336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            67.857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for the prevention
                                                                                  99
                                                                                                                                      84
                                                                                                                                                                  200
                                                                                                                                                                                             67
                                                                                                                                                                                                                         150
                                                                                                                                                                                                                                                    50
                                                                                                                                                                                                                                                                                                                                    50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of.
```

seq_name:

/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:AAH42407

```
seq_documentation_block:
ID AAH42407 standard; DD
AC AAH42407;
XX AAH42407;
XX Nucleotide sequence (
XX Antibody; light chair
KW Antibody; light chair
KW endothelial cell; bix
KW transferrin receptor;
KW prion disease; AIDS-1
XX 21-JUN-2001.
XX PPF 27-NOV-2000; 2000WO-(
XX (CAMB-) CAMBRIDGE AN:
XX (CAMB-) CAMBRIDGE AN:
XX WPI; 2001-398131/42.
PR HOTEL STANDARD COMPANY
XX WPI; 2001-398131/42.
DR P-SDB; AAG62963.
XX WPI; 2001-398131/42.
DR P-SDB; AAG62963.
XX Mixture or panel of a prion concurrent sequence concurrent sequence condifferent specific binding member comprible decomposition of the present sequence condifferent specific binding member comprible decomposition of the sequence condifferent specific binding member comprible decomposition of the sequence condition o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CC fragment. The fragment is used to produce a mixture or panel of 5 CC different specific binding members, each comprising an antibody VH CC and/or VL variable domain and capable, when displayed on the surface CC of filamentous bacteriophage particles or in the case of a specific CC binding member comprising the D5 VH and/or VL variable domain when CC bond to human serum amyloid protein, to pass through a mammallan CC blood brain barrier (BBB). The panel is useful for the selection of CC cross BBB, ability to bind endothelial cells or other brain cell antigen, CC ability to bind areas of inflammation in the brain or BBB breakdown or receptor. The antibodies are useful in diagnosis, prophylaxis and CC treatment of human or animal body, including neurological diseases, such as Alzheimer's disease, prion disease, AIDS-related dementia, epilepsy cand traumatic brain injury and any diseases involving inflammation coccurring within the brain or central nervous system.
                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
Quality:
                                                                                                                                                                                                                              alignment_block:
                                                                                                                         Align seg
                                                                                                                                                                                          US-09-786-015-4 x AAH42407
                                                                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mixture or panel of antibodies for selecting specific binding members that cross the blood brain barrier, for use in delivering different molecules and treating neurological diseases \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Antibody; light chain; VI; amyloid protein; blood brain barrier; endothelial cell; brain cell antigen; inflammation; adhesion mole transferrin receptor; neurological disease; Alzheimer's disease; prion disease; AIDS-related dementia; epilepsy; brain injury; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence encodes an antibody variable light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 106; 109pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CAMB-) CAMBRIDGE ANTIBODY TECHNOLOGY
2001-398131/42
                                                                                                                                                                                                                                                                                                                          Ratio:
                                                                                                                               :0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Osbourn J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000WO-GB04501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9905-0170599
                                                                                                                               AAH42407
                                                                                                                                                                                                                                                                                                                          382.00
3.979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72
                                                                                                                                                                                                                                                                                      86.486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ncodes an antibody variable light chain (VL) is used to produce a mixture or panel of 5 ding members, each comprising an antibody VH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         variable light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ward G,
                                                                                                                               from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ç
                                                                                                                                                                                                                                                                                         Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>و</u>:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Miller
                                                                                                                            to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             76
                                                                                                                                                                                                                                                                                                                   Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      fragment of
                                                                                                                                                                                                                                                                                         64.865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clone G102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              molecule;
```

```
seq_documentation_block:
ID AAC67868 standard: DI
XX
AC AAC67868 standard: DI
XX
AC AAC67868;
XX
I6-FEB-2001 (first (
Interpretation of the color of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name:
                                                                                                                                                                                                                                                                                                                                                                                 Ligands used for diagnosis capable of identifying the tenascin-C -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                                                                                                      Claim 8; Page 5-6; 31pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (PHIL-) PHILOGEN SRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Recombinant human antibody scfv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGTCTGGCCAACACGGCCTCCCTGACAATCTCTGGGCTCCAGGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT::::::||||:::||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGAGGGCAGTAAGCGGCCCTCAGGGGTTTCTAATCGCTTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCGGCGGAGGGACCAAGCTGACCGTCCTAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGAGGCTGATTATTACTGCAGCTCATATACAACCAGGAGCACTCGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000-687225/67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT:AAC67868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antibody scFv; TN11; Tenascin-C; TN-C; domain C-containing ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000WO-EP03550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99IT-FI00094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           747
                                                                                                                                                                                                                                                                                                                                                                                                      and treatment of human neoplasias, tenascin-C isoform containing doma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TN11 nucleotide sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34
                                                                                                                                                                                                                                                                                                                                                                                                            domain
                                                                                                                                                                                                                                                                                                                                                                                                            are
Lin C
                                                                                                                                                                                                                                                                                                                                                                                                            of.
```

The present sequence encodes a recombinant human antibody scFv. Antibody TN11 reacts with the long form of human Tenascin-C (TN-C). The epitope recognised by TN11 is located inside domain C of TN-C. TN11 is therefore only capable of recognising TN-C isoforms containing domain C (cTN-C). TN11 is useful for detecting the presence of TN-C isoforms in vitro or in vivo for diagnosing pathologies expressing the cTN-C isoforms of TN-C. It is useful for the preparation of formulations for the treatment of

Sequence 747 BP; 157 A;

197 C;

231 G; 162 T; 0 other

alignment_scores:

Quality: Ratio:

382.00 3.979 86.486

Percent Identity: 64.865

Percent Similarity:

```
seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1 to: AAC67868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-786-015-4 x AAC67868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       415 CAGTCCGTGCTGACTCAGCCTGCCTCCGTGTCTGGGTCTCCTGGACAGTC 46
           Marks JD,
                                                             24-APR-1998;
12-FEB-1999;
                                                                                                   23-APR-1999;
                                                                                                                           04-NOV-1999
                                                                                                                                                   W09955367-A1
                                                                                                                                                                                                      mat_peptide
                                                                                                                                                                                                                                                                                 HER/neu oncogene; tumour-specific; internalisation; non-immunogenic;
                                                                                                                                                                                                                                                                                             Antibody; c-erbB-2 receptor; marker; cancer; drug targetting;
                                                                                                                                                                                                                                                                                                                      Internalising anti-c-erbB-2 receptor antibody scFv F5 cDNA.
                                                                                                                                                                                                                                                                                                                                                 27-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                 AAZ55614 standard;
                                                                                                                                                                                                                                              HOMO
                                   (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATCACCATCTCCTGCACTGGAACCAGCAGTGATGTTGGTGGTTATAACT 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCGGCGGAGGGACCAAGCTGACCGTCCTAGGT 747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACGAGGCTGATTATTACTGCAGCTCATATACAACCAGGAGCACTCGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATGAGGGCAGTAAGCGGCCCCCAGGGGGTTTCTAATCGCTTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTCTCCTGGTACCAACAACACCCAGGCAAAGCCCCCAAACTCATGATT
                                                                                                                                                                                                                                          sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                      /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT: AAZ55614
           Poul MA
                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                             98US-0082953
99US-0250056
                                                                                                  99WO-US07395
                                                                                                                                                                                                      Location/Qualifiers
1..738
                                                                                                                                                                          /*tag= a
/product= "Internalising anti-c-erbB-2 antibody F5"
                                                                                                                                                                                                                                                                                                                                                                                                  cDNA; 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ţo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50
```

alignment_block: $US-09-786-015-4 \times AAZ55614$

Percent Similarity:

Align seg 1/1 to: AAZ55614

502

17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT

503 GTGTACACTGGTACCAGCAGCTTCCAGGAACAGCCCCAAACTCCTCATC

84 spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGly...

CAAGTCTGGCACCTCAGCCTCCCTGGCCATCACTGGGCTCCAGGCTGAGG rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA TATGGTAACACCAATCGGCCCTCAGGGGTCCCTGACCGATTCTCTGGCTT SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe

652 84 602

67 552 50

34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle

51

403 CAGTCTGTGTTGACGCAGCCGCCCTCAGTGTCTGGGGCCCCAGGGCAGAG

452

1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr

from: 1

ć : 738 alignment_scores

Quality: Ratio:

381.50 3.815 89.286

Gaps: Percent Identity:

66.964

Sequence 738 BP; 145

۶,

204 C;

232 G; 157 T;

0 other;

```
are used as tumour-targetting molecules for diagnosis and treatment. The carbibodies can be attached to effector molecules. The effector molecules artibodies can be attached to effector molecules. The effector molecules can be attached to effector molecules. The effector molecules cytotoxins such as ricin, abrin or pseudomonas exotoxin; cradionuclides; ligands such as growth factors; therapeutic agents such as vinblastine, vindesine or melphalan; ribozymes; or antisense concludes. The antibodies may also be used for in vivo or in vitro detection and/or quantitation of the c-erb-2 receptor and thus diagnosis and/or localisation of cancers characterised by expression of c-erb-2. Although antibodies have previously been used to target tumour cells, their success has been limited. The utility of prior art antibodies has been hampered by the paucity of tumour specific antibodies, antibody immunogenicity, low binding affinity, and poor tumour penetration. CC tumour specific human antibodies were available. However, the production of human monoclonal antibodies using conventional hybridoma technology has proven difficult. Also, most of the antibodies produced react with cantibable for use as tumour-targetting molecules. The antibodies of the invention overcome these difficulties, as they are targetted to a cumour specific antigen, and avoid the problem of immunogenicity as they are targetted to a cumour specific antigen, and avoid the problem of immunogenicity as they
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This sequence represents cDNA encoding an internalising humanised antibody, scFv F5, which specifically binds to the extracellular domain of the c-erbB-2 receptor, the protein product of the HER/neu oncogene. The scFv F5 antibody binds to the epitope of the c-erbB-2 receptor that is bound by F5 antibodies. On binding the c-erbB-2 receptor, the antibody is transported into the cell. The c-erbB-2 receptor is a marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein which is overexpressed by 30-50% of breast carcinomas and other adenocarcinomas, and thus provides a useful cell surface marker for specifically targetting tumour cells. The antibodies of the invention
                                                      are human in origin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel internalizing antibodies used to treat cancer cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English
```

```
alignment_block:
US-09-786-015-4 x AAS03477
                                                                                                                      alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name:
 Align
                                                                           Percent Similarity:
                                                                                                                                                                                           used in the treatment of obesity and obesity related diseases. The antibodies can be used to deliver drugs or pro-drugs directly to the fat mass of an obese patient or the antibody can be used as a therapeutic itself. Antibodies binding specifically to adipocytes can be used to activate the immune system to destroy the cells by complement mediated lysis. The antibodies may be labeled with a detectable label such as radiolabel, fluorescent or chemical group and used in methods of diagnosis in human subjects e.g. to determine the presence of adipocyte antigen on the surface of an adipocyte to detect or determine the presence of adipocytes in a cell or tissue sample. The antibodies can be used as an alternative means of treatment for obese patients other than undergoing surgery to remove excess fat. Antibodies for different types of fat deposits can also be produced e.g. intra-abdominal fat associated with heart disease.
                                                                                                                                                                                                                                                                                                                                                                                                          AAS03401-AAS03535 represent anti-adipocyte monoclonal antibody heavy and light chain coding sequences of the invention. The antibodies can
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 140-141; 182pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-OCT-2000; 2000WO-GB03900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Antibody; adipocyte; heavy chain; light chain; obesity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CAMB-) CAMBRIDGE ANTIBODY TECHNOLOGY
 seg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ValPheGlySerGlyThrArgLeuThrValLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGTTCGGCGGAGGGACCAAGCTGACCGTGCTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAGGCTGATTATTACTGCCAGTTCTATGACAGCAGCCTGAGTGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT: AAS03477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of specific binding members of antibody molecules which bind adipocytes is used in the treatment of obesity and obesity
 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   adipocytes is used ed diseases -
                                                                                                        Quality:
                                                                                          Ratio:
   ..
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Main SH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                anti-adipocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
 AAS03477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0158812
                                                                       381.00
3.928
88.182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cDNA;
                                                                                                                                                                    A.
                                                                                                                                                                    102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vaughan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         330
from:
                                                                           Percent
                                                                                                                                                                    Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                monoclonal antibody light chain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВP
                                                                                                                                                                    82
 μ
                                                                                                                                                                    <u>ن</u>
 to:
                                                                           Identity:
                                                                                                                                                                    76
                                                                                                        Length:
                                                                                          Gaps:
                                                                                                                                                                    T; 0 other;
                                                                         0
64.545
                                                                                                       110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                             can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
```

```
seq_documentation_block:
ID AAH42401 standard:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_name:
                                                                                                     Mixture or panel of antibodies for selecting specific binding members that cross the blood brain barrier, for use in delivering different molecules and treating neurological diseases \,
                                                                                                                                                                                                                                                                                                                                                        Antibody; light chain; VL; amylold protein; blood brain barrier; endothelial cell; brain cell antigen; inflammation; adhesion molecule; transferrin receptor; neurological disease; Alzheimer's disease; prion disease; AIDS-related dementia; epilepsy; brain injury; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                Disclosure;
                                                                                                                                                                                        Webster C,
                                                                                                                                                                                                               (CAMB-) CAMBRIDGE ANTIBODY TECHNOLOGY.
                                                                                                                                                                                                                                       13-DEC-1999;
                                                                                                                                                                                                                                                              27-NOV-2000; 2000WO-GB04501
                                                                                                                                                                                                                                                                                      21-JUN-2001
                                                                                                                                                                                                                                                                                                            WO200144300-A2
                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                   Nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PheGlySerGlyThrArgLeuThrValLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTCTCCTGGTACCAACAACACCCAGGCGAAGCCCCCAAACTCATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCGGCGGAGGGACCAAGGTCACCGTCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGAGGCTGATTATTACTGCAGCTCATATGCAGGCAGCAACACTGTAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGTCTGGCAACACGGCCTCCCTGACCGTCTCTGGGCTCCAGGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATGAGGTCACTAAGCGGCCCTCAGGGGTCCCTGATCGCTTCTCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                     2001-398131/42
DB; AAG62957.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:AAH42401
                                                                                                                                                                                                                                                                                                                                                                                                                   sequence
                                                                               Page 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                       99US-0170599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                   of.
                                                                             109pp;
                                                                                                                                                                                                                                                                                                                                                                                                                  variable light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        333
                                                                                                                                                                                        Ward G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                               English
                                                                                                                                                                                         Miller
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110
                                                                                                                                                                                        ~
                                                                                                                                                                                                                                                                                                                                                                                                                  fragment of clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50
                                                                                                                                                                                                                                                                                                                                                                                                                   G93
```

The present sequence encodes an antibody variable light chain (VL) fragment. The fragment is used to produce a mixture or panel of 5 different specific binding members, each comprising an antibody VH and/or VL variable domain and capable, when displayed on the surface of filamentous bacteriophage particles or in the case of a specific binding member comprising the D5 VH and/or VL variable domain when

```
alignment_scores:
Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-786-015-4 x AAH42401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: AAH42401 from: 1 to: 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bound to human serum amyloid protein, to pass through a mammalian blood brain barrier (BBB). The panel is useful for the selection of specific binding members with a desired property such as ability to cross BBB, ability to bind endothelial cells or other brain cell antigen, ability to bind areas of inflammation in the brain or BBB breakdown or ability to bind intracellular adhesion molecules and to bind transferrin receptor. The antibodies are useful in diagnosis, prophylaxis and treatment of human or animal body, including neurological diseases, such as Alzheimer's disease, prion disease, AIDS-related dementia, epilepsy and traumatic brain injury and any diseases involving inflammation occurring within the brain or central nervous system.
301
                     251
                                                                                                                                                                                     201
                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 333 BP; 71 A; 99 C; 87 G; 76 T; 0 other;
                                                                                                                                    84
                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr 17
                                                                                                                                                                                  GATCACCATCTCCTGCACTGGAACCAGCAGTGACGTTGGTGGTTGATAACT 100
                                                                                                                 TTCGGCGGAGGGACCAAGCTGACCGTCCTAGGG 333
                                                                                      ACGAGGCTGATTATTACTGCAGCTCATATACAACCAGGGGCACTCGAGTT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGTCTGTGCTGACTCAGCCTGCCTCCGTGTCTGGGTCTCCTGGACAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  381.00
3.969
86.486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length: 111
Gaps: 0
Percent Identity: 64.865
```

THIS PAGE BLANK (USPTO)

```
9b_est2:BE48929

9b_est2:BE78929

9b_est2:BE789919

9b_est2:BE692841

9b_est2:BE692841

9b_est2:BE692841

9b_est2:BE692841

9b_est2:BE68890

9b_est2:BE68870

9b_est2:BF774840

9b_est2:BF7898176

9b_est2:B688903

9b_est2:B6389176

9b_est2:B6389176

9b_est2:B6389176

9b_est2:B6389176

9b_est2:B6389462

9b_est2:B6688462

9b_est2:B6688462

9b_est2:B6688462

9b_est2:B6688462

9b_est2:B6688462
                                                                                                                                                                                                                                                                                                                                                                                                                              9b_est2:BE590205
9b_est2:BE48569
9b_est2:BE4876758
9b_est2:BE487575
9b_est2:BE485560
9b_est2:BE4853566
9b_est2:BE69278
9b_est2:BE69278
9b_est2:BE69278
9b_est2:BE69278
9b_est2:BE698615
9b_est2:BE688615
9b_est2:BE688615
9b_est2:BE483616
9b_est2:BE483616
9b_est2:BE483616
9b_est2:BE483616
9b_est2:BE483616
9b_est2:BE483616
9b_est2:BE483616
9b_est2:BE483616
9b_est2:BE483616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Search information block:
Query: US-09-786-015-4
Query length: 111
Database: EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_est2:BE476398
gb_est2:BE476752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database sequences: 13736207
Database length: -1841457050
Search time (sec): 2544.760000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM of: US-09-786-015-4 to: EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -MODEL-frame+_p2n.model -DEV=xlp
-Q=/cgn2_1/USPTO_spool/US09786015/runat_12082002_092422_40/app_query.fasta_1.347
-Q=/cgn2_1/USPTO_spool/US09786015/runat_12082002_092422_40/app_query.fasta_1.347
-DB=EST-OpMT=fastap -SUFFIX-p2n.rst -GAPOD-12.000 -GAPEXT=4.000
-MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000 -GAPOD=6.500
-QGAPEXT=0.100 -LOOPCL=0.000 -XGAPEXT=0.500 -FGAPOP=6.000
-FGAPEXT=7.000 -YGAPOD=10.000 -YGAPEXT=0.500 -DED=6.000
-DELEXT=7.000 -START=1 -MATRIX=blosum62 -TRANS=human40.cdi
-LIST=45 -DOCALIGN=20 -THR_SCORE=pct -THR_MAX=100 -THR_MIN=0
-ALIGN=15 -MODE-LOCAL -OUTPMT=pfs -NORM=ext -HEAPSIZE=500
-MINLEN=0 -MAXLEN=200000000 -USER=US09786015_@CGN1_1 4526
-NCPU=6 -TCPU=3 -LONGLOG -DEV_TIMEDUT=120 -WARN_TIMEOUT=30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NO_XLPXY -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Results were produced by Copyright (c) 1993-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2002 10:07
                                                                                                                                                                                                                                                                                                                                                                                                                                     408
407
407
                                                                                                                                                                                                     402
401
400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ¥
                                                                                                                                                                                                                                                                       403
403
                                                                                                                                                                                                                                                                                                                                           106
                                                                                                                                                                                                                                                                                                                                                                                         107
                                                          ...............................
                                                                                                                                                                                                                                                                                                                                                                                         . 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            y the GenCore
Compugen Ltd.
         838.46

813.57

8806.78

8806.78

8806.78

8806.77

799.88

779.88

776.02

776.02

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

775.86

77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    out_format :
                                                        .1e-31
.2e-31
.3e-31
.6e-31
.8e-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EScore
                                                                                                                                                                                                                                                                                          .8e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                         .5e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .5e-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .1e-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .0e-36
                                                                                                                                                                                                                        .7e-32
.3e-32
                                                                                                                                                                                                                                                                                                                                                              .9e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .6e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .2e-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .7e-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .5e-35
                                                                                                                                                                                                     . 6e-32
                                                                                                                                                                                                                                                                       .4e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .7e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 2e-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .0e-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .9e-37
                                                                                                                                                                                                                                                                                                                                           2e-32
                                                                                                                                                                                                                                                                                                                                                                                         6e-32
                                                                                                                                                                                                                                                                                                                                                                                                             2e-
                                                                                                                                                                                                                                                                                                                                                                                                                                     2e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2e-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3e-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8e-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2e-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7e-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  software, version
BE476398 159628 BARC 5BOV BOS 1
BE476752 160141 BARC 5BOV BOS 1
BE590205 197215 BARC 5BOV BOS 1
BE590205 197215 BARC 5BOV BOS 1
BE48669 172803 BARC 5BOV BOS 1
BE48669 172803 BARC 5BOV BOS 1
BE487574 176397 BARC 5BOV BOS 1
BE488515 37633 BARC 5BOV BOS 1
BE488515 37633 BARC 5BOV BOS 1
BE488516 169832 BARC 5BOV BOS 1
BE488516 17218 MARC 2BOV BOS 1
BE488517 371154 MARC 2BOV BOS 1
BE488518 3791154 MARC 2BOV BOS 1
BE488518 389123 BARC 5BOV BOS 1
BE488518 188653 471154 MARC 2BOV BOS 1
BE488518 188658 371154 MARC 2BOV BOS 1
BE488518 188658 371154 MARC 2BOV BOS 1
BE488518 188658 37155 BARC 5BOV BOS 1
BE488518 33631 BARC 5BOV BOS 1
BE488519 336418 BARC 5BOV BOS 1
BE688510 336418 BARC 5BOV BOS 1
BE688510 336418 BARC 5BOV BOS 1
BE751128 20731 MARC 3BOV BOS 1
BE751128 20731 MARC 3BOV BOS 1
BE7888519 336418 BARC 5BOV BOS 1
BE78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Documentation
HE476398 159
HE476752 160
HE590205 197
HE485669 172
HE589073 194
HE589073 194
HE475758 160
HE476758 160
HE476758 160
HE4767574 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.5
                                                                                                                                                                                                                                                                                          alignment_block:
US-09-786-015-4 x BE476398
                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block: LOCUS BE476398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name: gb_est2:BE476398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                              Align seg 1/1 to: BE476398
                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                          137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                   17
                                                                                                                                                    87
            34
                                                                                                                                                  yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
                                                                                                                                                                                                                                                                                                                                                                                                             Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and -minmature PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -minmatch 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                            457.00
4.437
92.793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 515
                                                                                                                                                                                                                                              from:
```

Gaps: Percent Identity:

Length:

111 0 80.180

۳

to: 515

50

```
gb_est2:BE476331
gb_est2:BE478852
gb_est2:BI760920
gb_est2:BG690901
gb_est1:AW406215
                                                                                                                                                                                                                                                                                                                                                                   Unpublished (2000)
Contact: Sonstegard TS
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                           FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTCCCAGTCAGCACG
Plate: 27 row: G column: 1
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      515 bp mRNA linear 159628 BARC 5BOV Bos taurus cDNA 5', mRNA sequence. BE476398
                                                                                                                                                                                                                                                                                                                  Single pass sequencing. Bases (v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovidae; Bovinae; E
l (bases 1 to 515)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE476398.1 GI:9595931
                                                                                                                                                                                                                                                                                                                                                   tads@lpsi.barc.usda.gov
/tissue_type="pooled"
/lab_host="DH10B"
/lab_host="DH10B"
/note="Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI;
/ibrary made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disessates."
178 c 132 g 107 t
                                                                                                                      /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  391
390
390
389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . . . 50
                                                                                                                                                                                                                                                                                                options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                719.
718.
711.
716.
715.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07
45
84
16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8.3e-31
9.0e-31
2.1e-30
1.2e-30
1.2e-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tags
                                                                                                                                                                                                                                                                                                                  called and alt_trimmed with phred
d by cross_match with the -minscor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  413
820
476
402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             D
                                      developmental, and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE476331
BE478852
BI760920
BG690901
AW406215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 159536 BARC SBOV BO
12 163292 BARC SBOV BO
0603043119F1 NIH_MGC
01 339802 BARC SBOV BO
5 UI-HF-BLO-acp-b-06-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST 28-AUG-2000
```

```
Seq_documentation_block:
LOCUS
DEFINITION 160141 BARC 5E
ACCESSION BE476752
VERSION BE476752.1 G1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
alignment_block:
                                                                        alignment_scores:
                                                                                                                    ORIGIN
                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: gb_est2:BE476752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                              Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          187
                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGATCTGGGAACACAGCCACCCTGACCATCAGCTCTCCCAGGCTGAGG 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCGGCACAGGGACCACACTGACCGTCCTGGGT 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGAGGCTGATTATTTCTGTGCATCTTATGAAAGCGGTAACACTGCTGTT 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST.
                                                        Quality:
                                                                                                                                                                                                                                                                                                           FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 28 row: K column: 18
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                  Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called
v0.980904.e. Vector identified by crc
and _minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE476752.1 GI:9596285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              160141 BARC 5BOV Bos taurus cDNA 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                         PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mapping of Expressed Sequence Tags from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                           Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 451)
                                                                                                                                  75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cDNA library
                                                                                                                                    D
                                                                                                                                 /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

a 160 c 123 g 93 t
                           456.00
4.427
92.793
                                                                                                                                                                                                                                   /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                       /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                            Location/Qualifiers
                           Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              451
                                                                                                                               g
                                         Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            đđ
                                                                                                                      93 t
                                                                                                                                                                                                                                                                                                                                                                                                  led and alt_trimmed with phred cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                           111
0
81.081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                                                                                              developmental, and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    normalized bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                   -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                      18
                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION ACCESSION
                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name:
                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     229
                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seg 1/1
                                                                                                              Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COW.
```

```
seq_documentation_block:
LOCUS BE590205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-786-015-4 x BE476752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             129 GGTCTCCATCACCTGCTCTGGAAGCAGCAGCGACGTTGGAACTGGCAATT 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79 CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCCGGGTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGAGGCAGATTATTTCTGTGCATCTTATCAGAGTGGTGACACAGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGGTGCGACCAGTCGAGCCTCGGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGTGAGCTGGTTCCAACAGATCCCAGGATCGGCCCCCAGAACCCTCATC 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCGGCAGCGGGACCACGCTGACCGTCCTGGGT 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est2:BE590205
                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE590205 467
197215 BARC 5BOV Bos taurus
                                                                                                                                                                                                                          PCR PRimers
FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                 Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE590205.1 GI:9843244 EST.
                                                                                                                                                                     Plate: 117 row: M column: 12
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                               and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                   Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mapping of Expressed Sequence Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 467)
Sonstegard, T.S., Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BE590205
                                                                                                                                                                                                               BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wells,K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to:
                 /clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                   /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                               Location/Qualifiers
                                                                                                                                  .467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Н
PCMV SPORT6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7 bp mRNA linear cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                   called and alt_trimmed with phred
d by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
```

Site_1:

XbaI;

Site_2:

XhoI;

Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease

ť

```
VERSION
KEYWORDS
                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
LOCUS BE485669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_block:
US-09-786-015-4 x BE590205
                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to: BE590205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                            TITLE
                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74 CAGGGTGTGCTGACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATTCGGCAGCGGGACCACACTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ValPheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGAGGCAGATTATTTCTGTGCATCTCCTGACAGTAGTAACAGGAGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTCTCCATCACCTGCTCTGGCAGCAGCGGCAATATTGGAAATGGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGTGACCTGGTTCCAACAGATCCCAGGATCGGCCCCCAGACTGCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                    gb_est2:BE485669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
Ratio:
        Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscorr
                                                            Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                        EST.
                                                                                                                                                                                                                                                                                                                                                      172803 BARC 5BOV Bos taurus
BE485669
                                                                                                                                          Unpublished (2000)
                                                                                                                                                            gland
                                                                                                                                                                          Mapping of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                        Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P.,
                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                        Bos taurus
                                                                                                                                                                                                                                                                                                                                       BE485669.1 GI:9605202
                                                                                                                                                                                                                                         Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                         (bases 1 to 495)
   -minmatch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   83
                                                                                                                                                            cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 states."
a 161 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   444.50
4.358
91.071
options
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۳
                                                                                                                                                                                                                                                                                                                                                                                      495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length: 112
Gaps: 1
Identity: 81.250
                                                                                                                                                                                                                                                                                                                                                                   5 bp mRNA linear
cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         173
                                                                                                                                                                                                          Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                323
                                                                                                                                                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                      EST
                -minscore
                                                                                                                                                                                                                                                                                                                                                                                      28-AUG-2000
                                                                                                                                                                                                                                                        Bovoidea;
                                                                                                                                                                                                           and
                18
```

```
REFERENCE
AUTHORS
                                                                                  SOURCE
ORGANISM
                                                                                                                                                      DEFINITION ACCESSION
                                                                                                                                                                                        seq_documentation_block:
LOCUS BE589073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_scores:
Quality:
                                                                                                                                                                                                                                     seq_name: gb_est2:BE589073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                    KEYWORDS
                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-786-015-4 x BE485669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: BE485669
                                                                                                                                                                                                                                                                             387
                                                                                                                                                                                                                                                                                                                                               337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137
                                                                                                                                                                                                                                                                                                          101 PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187 TTGTGAGCTGGGTGCAACAGATCCCAGGATCGGCCCCCAGAACCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
|||:::|||:::|||||||||||||
TATGCTGCGACCAGTCGAGCCTCCGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
|||||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                    rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTCTCCATCACCTGCTCTGGAAGCAGCAAGAACGTTGGAACTGGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                           TTCGGCAGCGGGACCACACTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                               ACGAGGCAGATTATTTCTGTGCATCTTGGCAAATTGGTAACAATGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                  gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                  BE589073.1 GI:9842112
EST.
                                                                                                                                                     BE589073 564 bp
194817 BARC 5BOV Bos taurus cDNA
BE589073
                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Bovinae; Bos.
                                                                                  cow.
Bos taurus
1 (bases 1 to 564)
Sonstegard, T.S., Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plate: 132 row: F column: 18 Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."

174 c 131 g 95 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  443.00
4.386
90.991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length: 111
Gaps: 0
Percent Identity: 79.279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to: 495
 Van Tassell, C.P.,
                                                                                                                                                                     mRNA linear
5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           186
 Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                  336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             136
                                                                                                                                                                                        EST
                                                                                                                                                                                        28-AUG-2000
                                                  Bovoidea;
```

```
alignment_block:
US-09-786-015-4 x BE589073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: BE589073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                          400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                  350
                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                 150
                                                                            101
                                                                                                                                                                                                                                                                        250
                                                                                                                                                                                                                                                                                                                                                     200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100 CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAG 149
                                                                                                                                                                                                                                                                                                                                                                       34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle 50
                                                                                                                                                        84
                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                              51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                                                                      gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                            PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                            GATCTCCATCACCTGCTCTGGAAGCAGCAGCAACATTGGAACTGGCAATT 199
                                                                                                                ACGAGGCAGATTATTTCTGTGCATCTTATCAGGGTGGTAGGACAGCTGTT
                                                                                                                                    GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr 17
                                                                                                                                                                                                                                rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                          TTCGGCGGCGGGACTACATTGACCGTCCTGGGT 432
                                                                                                                                                                                                                                                                                                                                                     ATGTGAGTTGGTTCCAACAGATCCCAGGATCGGCCCCCAGAACCCTCATC
  gb_est2:BE476758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gland cDNA library
Unpublished (2000)
Contact: Sonstegard TS
CONTACT: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bdig. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8414
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCAGACG
Plate: 121 row: M column: 18
Seg primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.989904.e. Vector identified by cross_match with the -minscor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wells, K.D.
Mapping of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note-"Vector: pCMV SPORT6; Site_1: XbaI; Site_2: X Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and states."

191 c 155 g 112 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                440.00
4.356
90.991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps: 0
Percent Identity: 77.477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ţo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        developmental, and disease
                                                                                                                  399
                                                                                                                                                                                            349
                                                                                                                                                                                                                                                                        299
                                                                                                                                                                                                                                                                                                                                                 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XhoI;
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN

      seq_documentation_block:

      LOCUS
      BE476758

      DEFINITION
      160150 BARC 5BOV Bos t:

      ACCESSION
      BE476758

      VERSION
      BE476758.1

      GI:9596291

                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-786-015-4 x BE476758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
   Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: BE476758
                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                            source
                                      236 TATGGTGACACCAGTCGAGCCTCGGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                            67
                                                                           51
                                                         SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BACKWARD: GTTTTCCCAGTCACGACG
Plate: 28 row: L column: 3
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gland cDNA library
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mapping of Expressed Sequence Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovidae; Bovinae; Bos.
1 (bases 1 to 496)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and diser
states."
                                                                                                                                                                                                                                                                                                                                                                                                                                438.00
4.294
91.071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      496 bp mRNA linear 5BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  167 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                        from:
                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            133 g
                                                                                                                                                                                                                                                                                                                                        ب
                                                                                                                                                                                                                                                                                                                                      to: 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                  80.357
                                                                                                                                                                                       185
                                                                                                               235
                                                                                                                                                                                                                                                              138
                                      285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovoidea;
```

ζ

```
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                        alignment_block:
                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: gb_est2:BG691510
                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                    Align
                                                                                                      US-09-786-015-4 x BG691510
                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      386
                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100 ValPheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
   88
                                                                    seg 1/1
spGluAlaAspTyrTyrCysAlaSerTyrGln...SerThrTyrSerGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTTTCGGCAGCGGGACCACACTGACCGTCCTGGGT 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACGAGGCAGATTATTTCTGTGCATCTGCTGAGGATAGTAGCAGTAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (2000)
Contact: Sonstegard TS
CSONSTERM TS
USDA, ARS, Beltsville Agricultural Research
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST.
                                                                                                                                                                                          Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              340705 BARC 5BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FORWARD: AGGARACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 99 row: I column: 6
Seg primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and -minmate
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Single pass sequencing. Bases called v0.980904.e. Vector identified by cro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BG691510.1 GI:13933330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mapping of Expressed Sequence Tags from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                          Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 655)
                                                                     .
6
                                                                                                                                                                                                                                                                                  129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNA library
                                                                                                                                                                                                                                                                                                                                                                 /organism-"Bos taurus"
/db_xref-"taxon:9913"
/clone_lib-"BARC 5BOV"
/tissue_type-"pooled"
/lab_host="DH10B"
                                                                     BG691510
                                                                                                                                                                                                                                                                           /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

a 221 c 181 g 124 t
                                                                                                                                                        436.50
4.238
91.964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                     from:
                                                                                                                                                        Percent Identity:
                                                                     \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              655 bp
                                                                     .
.
                                                                                                                                                                                        Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             led and alt_trimmed with phred
cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                        1
78.571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 02-MAY-2001
                                                                                                                                                                                                                                                                                                                and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
```

```
VERSION
KEYWORDS
                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_documentation_block: LOCUS BE487574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name:
   ORIGIN
                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100 ValPheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      288
                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   238 TATGGTGCGACCAGTCGAGCCTCTGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          spGluAlaAspTyrTyrCysAlaSerTyrGln...SerThrTyrSerGly
|||||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTTCGGCAGCGGGACCACACTGACCGTCCTGGGT 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGAGGCGGATTATTTCTGTGCATCTCCTGACACTAGTAGCAAGAGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_est2:BE487574
                                                                                                                                                                                                                                                                                  Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                               USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                    Plate: 138 row: L column: 11 Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mapping of Expressed Sequence Tags from a normalized bovine mammary gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE487574.1 GI:9607107
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 176397 BARC 5BOV Bos taurus cDNA BE487574
                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bos taurus
                                                                                                                                                                                                                                    BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                    FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                     PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 493)
                 95
                 Ø
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                         /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
                                                                                                                                                                          1. .493
                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Capuco, A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
\ 5', mRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-AUG-2000
```

alignment_scores:

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
US-09-786-015-4 x BE487574
                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: gb_est2:BE483566
                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to: BE487574
                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139
               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATGGTGCGACCAGTCGAGCCTCGGGGGTCCCGGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gValSerTieThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTTGGCTGGTTCCAACAGATCCCAGGATCAGCCCCCAGAACCCTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTCTCCATCACCTGCTCTGGAAGCAACATCAACGTCGGAACTGGCAATT 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGCTGTGTTGACTCAGCCGTCCTCCGTGTCCCGGGTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGAGGCAGATTATTTCTGTGCATCTTATCAGAGTGGT...AATGCTGTT 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCGGCAGCGGGACCACTGACCGTCCTGGGT
                                                                                                                                                                           Contact: Sonstegard TS USDA, ARS, Beltsville Agricultural Research Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA Tel: 301 504 8416 Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                   EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           BE483566 518 bp mRNA linear 169766 BARC 5BOV Bos taurus cDNA 5', mRNA sequence
                                       BACKWARD: GTTTTCCCAGTCACGACG
Plate: 23 row: L column: 14
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                      Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                              BE483566
                                                                                                                                Single pass sequencing. Bases ov 0.980904.e. Vector identified
                                                                                                                                                                                                                                                   Unpublished (2000)
                                                                                                                                                                                                                                                                   gland cDNA library
                                                                                                                                                                                                                                                                                                                                           Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                 BE483566.1 GI:9603099
                                                                                     FORWARD: AGGAAACAGCTATGACCAT
                                                                                                      PCR PRimers
                                                                                                                                                            Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                               Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                              Wells, K.D.
                                                                                                                                                                                                                                                                                                           Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                   -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                              bases 1 to 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      435.50
4.312
90.991
/organism="Bos taurus'
                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps: 1
Identity: 77.477
                                                                                                                                                                                                                                                                             Tags
                                                                                                                                                called and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 493
                                                                                                                                γď
                                                                                                                               led and alt_trimmed with phred
cross_match with the -minscor
                                                                                                                                                                                                                                                                               from
                                                                                                                                                                                                                                                                               Ø
                                                                                                                                                                                                                                                                                normalized bovine mammary
                                                                                                                                                                                                                        Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST
                                                                                                                                  -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-AUG-2000
                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_scores:
   Quality:
                                                                                                                                                                                                                                                                                                                        seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                  REFERENCE
                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                    DEFINITION
                                                                                     TITLE
                                                        JOURNAL
                                                                                                                 AUTHORS
                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                         389
                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                                                                                                                                                                                                                339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142
                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ratio:
Similarity:
                                                                                                                                                                                        Bos taurus
                                                                                                                                                                                                                                                   BF231054
                                                                                                                                                                                                                                                                   253265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
```

```
seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-786-015-4 x BE483566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: BE483566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
|||||||||||||||:::|||||||||||:::
| GTTCTCCATCACCTGCACCGGAAGCAGCAATGTT...GGAAATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ValPheGlySerGlyThrArgLeuThrValLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGAGGCAGATTATTTCTGTGCAGCTGGTGACAGCAGTAGCAGTAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSer...Gly 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGGTGACACCAGTCGAGCCTCGGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTTTCGGCAGCGGGACCACACTGACCGTCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGTGAGCTGGTTCCAACAGATCCCAGGATCGGCCCCCAGAACCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est2:BF231054
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bd1g. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
                                                                                                                                                                                                                                                                                                    BF231054.1 GI:11169668 EST.
                                                                              gland cDNA library
Unpublished (2000)
                                                                                                                 Wells,K.D.
Mapping of Expressed Sequence Tags
                                                                                                                                                          1 (bases 1 to 363)
Sonstegard, T.S., Capuco, A.V.,
                                                                                                                                                                                                   Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                           54 363 bp mRNA linear
BARC 5BOV Bos taurus cDNA 5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."

177 c 141 g 99 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    435.00
4.223
91.964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Identity: 79.464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ب
                                                                                                                                                                                                                                                                                                                                                                                  363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       с
С
С
                                                                                                                                                            Van Tassell, C.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   424
                                                                                                                       from a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141
                                                                                                                                                              Ashwell, M.S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                       bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                  14-NOV-2000
                                                                                                                                                                                                                        Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   disease
```

Ĺ

```
SOURCE
ORGANISM
                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
US-09-786-015-4 x BF231054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                     seq_documentation_block:
LOCUS BG692788
                                                                                                                                                        seq_name: gb_est2:BG692788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                       VERSION
                                  (EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to: BF231054 from:
                                                                                                                                                                                             319
                                                                                                                                                                                                                                                                  269
                                                                                                                                                                                                                                                                                                                                                                                                          169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119
                                                                                                                                                                                                                                                                                                                                      219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                        67
                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSer.....
                                                                                                                                                                                                                                                                                                                                                       rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
||||||:::|||:::|||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                                                                                                                                                             GTTGCTGTTTTCGGCGGCGGCGGCACCATATTGACCGTCCTGGGT
                                                                                                                                                                                                             TATGATGTAACCACTCGAGCCTCTGGGGTCCCCGACCGATTCTCCGGCTC 218
                                                                                                                                                                                                                                                                                                                                                                                                                           SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe :::||| ||||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTGAGCTGGTTCCAACAGATCCCAGGATCGGCCCCCAGAATGCTAATT 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTCTCCATCACCTGCTCTGGAAGCAGCACCAATGTTGGATACGGCAAAT 118
                                                                                                                                                                                                                                                               ACGAGGCGGATTATTTCTGTGCATCTCCTGACAGTAGTAGTAGTGATGCT 318
                                                                                                                                                                                                                                                                                                                                     CAGGTCTGGGAACACAGCCACCCTAACCATCACCTCGCTCCAGGCCGAGG 268
                                             491 bp mRNA linear
342607 BARC 5BOV Bos taurus cDNA 5', mRNA sequence.
BG692788.
BG692788.1 GI:13934608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and -minmatch 12 options.
PCR PRimers
PCRWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fax: 301 504 8414
Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904 e. Vector identified by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plate: 107 row: D column: 2
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ratio:
 taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 426.50
4.181
89.474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism-"Bos taurus"
/db_xref-"taxon:9913"
/clone_lib-"BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          109 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ţ
O:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            83 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75.439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         developmental, and disease
                                                                                                                                                                                                                                                                                                    98
                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50
                                                                                                     EST 02-MAY-2001
```

```
alignment_block:
US-09-786-015-4 x BG692788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: BG692788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                            190 ATGTGAGCTGGTACCAACTGATCCCAGGCTCGGCCCCCAGAACCCTCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
   100
                                                                                                                                                                                       240 TATGGTGACACCAATCGCGCCTCGGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                    143 GGTCTCCATCACCTGCTCTGGAAGCAGCAGCAATGTT...GGAAATGGAT
                                                                         84
                                                                                                                                                                                                        34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle
                                                                                                                                                                                                                                                                                                                                                        17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                              93 CAGGCTGTGCTGACTCAGCCATCATCCGTGTCCGGGTCCCTGGGCCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                         ValPheGlySerGlyThrArgLeuThrValLeuGly 111
                                      ACGAGGCAGATTATTTCTGTGCAGCTGCTGACAATAACAACAAAAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (2000)
Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BACKWARD: GTTTTCCCAGTCACGACG
Plate: 43 row: F column: 6
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Single pass sequencing. Bases called and alt_trimmed word, 980904.e. Vector identified by cross_match with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mapping of Expressed Sequence Tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 491)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-"Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              423.00
4.147
91.071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1 to: 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  76.786
                                                                                                                339
                                                                                                                                                                                       289
                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                               239
                                                                                                                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                                      189
                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                142
                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ith phred -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    disease
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                     alignment_block:
US-09-786-015-4 x BG689524
                                                                                                                                                                                                                                                                                                                                                                alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
LOCUS BG689524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                    Align seg 1/1 to: BG689524
                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                        143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle 50
                                                                                       93 CAGGCTGTACTGACTCAGCCGTCCTCCGTGTCCGGGTCCCTGGGCCAGAG
                                                                                                                                                              1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTCTCCATCACCTGCTCTGGAAGCAGCGACAATGTTGGACTTGGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_est2:BG689524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bd1g. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                           Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plate: 102 row: K column: 2
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mapping of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sonstegard, T.S., Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bovidae; Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG689524.1 GI:13931325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        337633 BARC 5BOV Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                            Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 484)
                                                                                                                                                                                                                                                                                                                                                                                                                                      86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disease states."

a 161 c 136 g 101 t
                                                                                                                                                                                                                                                                                                           414.00
4.099
90.991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                      from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos.
                                                                                                                                                                                                                                                                                                           Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        484
                                                                                                                                                                                                                    to: 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 bp
                                                                                                                                                                                                                                                                                                                            Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
A 5', m
                                                                                                                                                                                                                                                                                                          111
0
: 72.072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                      192
                                                                                                        34
                                                                                                                                             142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST 02-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovoidea;
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_documentation_block:
LOCUS BE476453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name:
                                                      alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              343 ACGAGGCGGATTATTTTTGTTCATCTCCTGATAGTAGTAGCGGTGGTATT 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84 spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCGGCGGCGGGACCACACTAAGCGTGCTGGGT 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est2:BE476453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (2000)
Contact: Sonstegard TS
CONTACT: Sonstell TS
USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                             BACKWARD: GTTTTCCCAGTCACGACG
Plate: 27 row: I column: 22
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    159697 BARC 5BOV Bos taurus
BE476453
                                     Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Single pass sequencing. Bases c
v0.980904.e. Vector identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 489)
Sonstegard, T.S., Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE476453.1 GI:9595986
                                                                                                                                                                                                                                                                                                                                                                                                                      PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: tads@lpsi.barc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gland cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mapping of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                   FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wells,K.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bovidae; Bovinae;
                    Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                   -minmatch 12 options.
                                                                                                                              87
                                                                                                                            Ø
                                                                                                                                                                                                                  /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                          /note="Vector: pCMV SPORT6; Site_1: xbaI; Site_2: xhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and diseastates."
413.50
4.177
88.393
                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                             .489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Capuco, A.V., Van Tassell, C.P., Ashwell, M.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      489 bp
 Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              υρ mRNA
cDNA 5', mRN
                                     Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     called and alt_trimmed with phred
d by cross_match with the .minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA sequence
                                       112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST 28-AUG-2000
                                                                                                                                                                  and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovoidea;
```

alignment_block: US-09-786-015-4 x BE476453

Percent Similarity:

Percent

75.893

Align seg 1/1

. С

BE476453

from:

۳

. 6

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_est2:BG688615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
|||||||||
:::::|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGTGAGCTGGTTCCAACAGATCCCAGGATCGGCCCCCAGAACCCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTTCGGCAGCGGGACCACTGTGAACGTCCTGGGT 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ...PheGlySerGlyThrArgLeuThrValLeuGly 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTCTCCATCACCTGCTCTGGAAGCAGCGTCAACGTGGGAGCTTACAATT 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGAGGCAGCCTACTTTTGTGCATCTGCTCAGATCGGCAATGCTGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         336301 BARC 5BOV Bos taurus cDNA 5', mRN
BC688615
                                                                                                                                                                                                                                                                                     Unpublished (2000)
Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bd1g. 200 km 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
90.989904.e. Vector identified by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG688615.1 GI:13930416
EST.
                                                                                                                                                                                                                                                       and -minmatch 12 options.
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mapping of Expressed Sequence Tags from a normalized bovine mammary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sonstegard, T.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bovidae; Bovinae; Bos.
                                                                                                                                                                                  Plate: 104 row: L column: 2
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                      BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                        FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wells, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 528)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA library
                                                             /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_1ib="BARC 5BOV"
/tissue_type="pooled"
/lab_host="DH10B"
/note="Vector: PCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disertates."
                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Capuco, A.V., Van Tassell, C.P., Ashwell, M.S.
                                                                                                                                                                                                                                                                                           cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bovoidea;
                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name:
                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34
```

```
alignment_block:
US-09-786-015-4 x BG688615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_documentation_block:
LOCUS BE588329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: BG688615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         140 GGTCTCCATCACCTGCTCCGGAAGCAGCAGCAACATC...GGTACGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 gValSerIleThrCysSerGlySerSerSerAsnIleGlyGlyAsnAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90 CAGGCTGTGCTGACTCAGCCGTCCTCCGTGTCCGGCTCCCTGGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GlnAspValLeuThrGlnProSerSerValSerGlySerLeuGlyGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          spGluAlaAspTyrTyrCysAlaSerTyrGlnSerThrTyrSerGlyVal 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SerAlaThrThrAspArgAlaSerGlyIleProAspArgPheSerGlySe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTGGACTGGTACCAGCAGATCCCAGGATCGGGCCTCAGAACCATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGACACGGATTACTTCTGTGCAACGTATGACAGTAGTAGGACTACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATGGGAGTAGCAGGCGACCGTCGGGGGTCCCCGACCGATTCTCCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est2:BE588329
                                                             Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases
v0.980904.e. Vector identified
                                                                                                              USDA, ARS, Beltsville Agricultural Research Center
Bdlg. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                             EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality:
                                                 and
                                                                                                                                                                             Unpublished (2000)
Contact: Sonstegard TS
                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pec
                                                                                                                                                                                                                                                                                                                                                                                                         194153 BARC 5BOV Bos taurus cDNA
BE588329
FORWARD: AGGAAACAGCTATGACCAT BACKWARD: GTTTTCCCAGTCACGACG
                            PCR PRimers
                                                                                                                                                                                                                              Mapping of Expressed Sequence
                                                                                                                                                                                                                                                                                                                                              Bos taurus
                                                                                                                                                                                                                                                                                                                                                             COW
                                                                                                                                                                                                                                                                                                                                                                                              BE588329.1 GI:9841368
                                                                                                                                                                                                               gland cDNA library
                                                                                                                                                                                                                                               Wells,K.D.
                                                                                                                                                                                                                                                           Sonstegard, T.S., Capuco, A.V.,
                                                                                                                                                                                                                                                                                             Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
                                                                                                                                                                                                                                                                               (bases 1 to 474)
                                               -minmatch 12 options
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      413.50
4.177
89.189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ب
                                                                                                                                                                                                                                                                                                                                                                                                                                           474 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to: 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
                                                             called and alt_trimmed with phred by cross_match with the -minscore
                                                                                                                                                                                                                                                             Van Tassell, C.P.,
                                                                                                                                                                                                                            Tags from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                                                                                     5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73
                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                              normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                              Ashwell, M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                              Pecora;
                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                           EST 28-AUG-2000
                                                                                                                                                                                                                              bovine mammary
                                                                -minscore
                                                                                                                                                                                                                                                                                                              Bovoidea;
                                                                                                                                                                                                                                                              and
                                                                18
```

```
alignment_block:
US-09-786-015-4 x BE588329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
Quality: 413.00
Ratio: 4.130
Percent Similarity: 89.286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: BE588329 from: 1 to: 474
                 100 ValPheGlySerGlyThrArgLeuThrValLeuGly 111 :::||||||||||||
                                                                                                                                                                                                         193 ATGTGGGCTGGTACCAACAGGTCCCCAGGATCGGGCCTCAGAACCATCATC 242
                                                                                                                                                                                                                                                                                                                                              293 CAGGTCTGGCAACACACCACCCTGACCATCAGTTCGCTCCAGGGTGAGG 342
393 ATTTTCGGCAGCGGGACCACACTGACCGTCCTGGGT 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                  67 rArgSerGlyAsnThrAlaThrLeuThrIleSerSerLeuGlnAlaGluA 84
                                                                                                                                                                                                                                                                                                 34 yrValGlyTrpTyrGlnGlnValProGlySerAlaProArgLeuLeuIle 50
                                                                                                                                                                                                                                                                                                                                                                                                                  Plate: 115 row: B column: 2
Seq primer: ATTTAGGTGACACTATAG.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="BARC 5BOV"
/clone_lib="BARC 5BOV"
/tissue_type="pooled"
/lab host="DH10B"
/note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled mRNA isolated from mammary
tissues at eight physiological, developmental, and disease
states,"
2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length: 112
Gaps: 2
Percent Identity: 76.786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  129 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95′ t
```

```
gb_om:OAVRB14IG
gb_om:TTR320201
gb_om:BTU32850
gb_om:AF015494
gb_om:OAVR12IG
gb_om:BTIGG1HCX
gb_om:AF172667
                                                                                                                                                               9b_om:AF172660
9b_om:OAVR201G
9b_om:OAVRA41G
9b_om:AF172666
9b_om:AF172676
9b_om:AF1811G
9b_om:OAVRA191G
9b_om:OAVRA181G
9b_om:OAVRA181G
9b_om:AF0172664
9b_om:AF0172664
                                                                                                                                                                                                                                                                                                                                          9b_om:OAVRB15IG

9b_om:OAVR22IG

9b_om:BTU49778

9b_om:AF172659

9b_om:OAVRA10IG

9b_om:OAVRB6IG

9b_om:OAVRBA17IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_om:AF172680
gb_om:AF172662
gb_om:OAVRB7IG
gb_om:BTU55202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database: GenEmbl:*
Database sequences: 1797656
Database length: 1873333701
Search time (sec): 1937.690000
                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_om:AF172670
gb_om:AF172674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query: US-09-786-
Query length: 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_om:BTU49773
gb_om:OAVR21IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Search information block:
Query: US-09-786-015-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            웆
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_om:OAVR3IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_om:AF172663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              score_list:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -MODEL-Iramet_E2n.model -DEV-x1p
-Q-/cgn2_1/USPTO_spool/US09786015/runat_12082002_092422_53/app_query.fasta_1.347
-Q-/cgn2_1/USPTO_spool/US09786015/runat_12082002_092422_53/app_query.fasta_1.347
-DB-GenEmb1 -QFMT-fastap -SUFFIX-p2n.xge -GAPOP=12.000
-GAPOP-4.000 -MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000
-QGAPOP-4.500 -QGAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-FGAPOP=6.000 -FGAPEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-ECAPOP=6.000 -FGAPEXT=7.000 -START=1 -MATRIX-PLOSUM62
-TRANS-human40.cdi -LIST=45 -DOALIGN=200 -THR_SCORE-pct
-THR_MAX-100 -THR_MIN=0 -ALIGN=15 -MODE-LOCAL -OUTFMT=pfs
-NORM-ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000
-USER=US09786015_@CGN1_1_7012 -NCPU=6 -ICPU=3 -LONGLOG
-DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -NO_XLPXY -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Aug 12, 2002 10:39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Results were produced by Copyright (c) 1993-2000 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-786-015-2 to: GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  line parameters:
      Compugen
   the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore software, version ugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         out_format :
                                                                                                                                               1.1e-37
1.4e-37
1.6e-37
1.5e-37
2.0e-37
2.4e-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ESCORE
6.7e-40
1.3e-39
2.0e-39
3.0e-39
8.6e-39
   .8e-37
.8e-36
.2e-37
.4e-37
.0e-37
.5e-37
                                                                                                      .4e-37
.5e-37
.0e-37
                                                                                                                                                                                                                                                    .7e-38
.5e-38
.9e-38
                                                                                                                                                                                                                                                                                                                                          .1e-38
.2e-38
.2e-38
                                                                                                                                                                                                                                                                                                                                                                                                 .1e-38
                                                                                                                                                                                                                                                                                                                                                                                                                              .7e-38
.7e-38
.7e-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .4e-38
   | Documentation | Documentation | AF172660 Ovis aries clone 22 in AF172660 Ovis aries clone 146 in AF172660 Ovis aries clone 17 in 249156 Ovis aries mRNA for immunog 105202 Bos taurus immunoglobuli 3 249161 O aries mRNA for immunog 1049773 Bos taurus immunoglobuli 3 249167 Ovis aries clone 57 in AF172670 Ovis aries clone 57 in AF172670 Ovis aries clone 57 in 249157 O aries mRNA for immunog 249175 O aries mRNA for immunog 249176 O aries mRNA for immunog 249170 O aries mRNA for immunog 249170 O aries mRNA for immunog 249171 O aries mRNA for immunog 249173 O aries mRNA for immunog 249174 O aries mRNA for immunog 249174 O aries mRNA for immunog 24916 D 
1 X62916 B.taurus mRNA for immur
AR172667 Ovis aries clone 47 im
Z49169 O.aries mRNA for immunog
AR172679 Ovis aries clone 139 i
AF015499 Bos taurus immunoglobu
AF172665 Ovis aries clone 34 im
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_om: AF172661
gb_om: BTU55195
gb_om: AF172668
gb_om: TTR320196
gb_om: AF172673
                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
REFERENCE
                                                                                                                                alignment_block:
US-09-786-015-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
LOCUS AF172663
                                                                                                                                                                                                                      alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                   Align seg 1/1 to:
                                                                                                                                                                           Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                            V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                17
                                                          1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
               rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                          CAGGTGCAACTGCAGGAGTCGGGACCCAGCCTGGTGAAGCCCTCACAGAC
gb_om:AF172663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota;
Mammalia; E
                                                                                                                                                                                                       Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nematode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sheep
                                                                                                                                                                                         Ratio:
                                                                                                                                  x AF172663
                                                                                                                                                                                                                                                                                  77
                                                                                                     AF172663
                                                                                                                                                                           455.50
4.297
87.603
```

from:

1

. .

342

34 50 Percent

Length: Gaps: t Identity:

```
Submitted (26-JUL-1999) School of Veterinary Science, The Center for Animal Biotechnology, The University of Melbourne, Parkville, Melbourne, Victoria 3052, Australia
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA, partial cds. AF172663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF172663 342 bp mRNA linear MAM 01-SEP-
Ovis aries clone 22 immunoglobulin heavy chain precursor (IGHV)
                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 342)
White, G.P., Meeusen, E.N.T. and Newton, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF172663.1 GI:5815195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 342)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 parasite Haemonchus contortus
                 YWGPGLLVTVSS"
                                 /translation="QVQLQESGPSLVKPSQTLSLTCTVSGFSLASYAVNWVRQAPGKA
LEWVGGITSGGYKYYNPALKSRLSITRDTSKSQVSLALSSVTTEDTAAYYCVRGYGGI
                                                                                                                                                                                                                                      contortus"
                                                                                                                                                                                                                                                                                        /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="22"
                                                                 /Godon_start=1
/product="immunoglobulin heavy chain precursor"
/protein_id="AAD52590.1"
/db_xref="G1:5815196"
                                                                                                                                     /gene="IGHV"
                                                                                                                                                                     /gene="IGHV"
                                                                                                                                                                                                                                                     /tissue_type="abomasal lymph node"
/note="isolated from animals infected with Haemonchus
                                                                                                                                                                                                     /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               427
427
427
427
427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 50
 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               812
809
811
808
810
95 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
59
38
37
81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 + 7 9 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .1e-37
.8e-37
.8e-37
.1e-36
 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             372
492
363
507
                                                                                                                                                                                                                                                                                                                                                                                                                                            m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF172661 Ovis aries clone 14
U55195 Bos taurus immunoglob
AF172668 Ovis aries clone 52
AJ320196 Turslops truncatus
AF172673 Ovis aries clone 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAM 01-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bovoidea;
```

```
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
LOCUS AF172680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name:
                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                       CDS
                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          151
                                                                                                                                                   V_region
                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAACTAGTGGTGGATATAAATACTATAACCCGGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACCGTCTCCTCA 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGTGACAACTGAGGACACGGCCGCGTACTACTGTGTAAGAGGA.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCATCACCAGGGACACCTCCAAGAGCCAAGTCTCCCTGGCACTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTAGCCAGCTATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_om:AF172680
                                                                                                                                                                                                                                                                                                                         Direct Submission
Submitted (26-JUL-1999) School of Veterinary Science,
for Animal Biotechnology, The University of Melbourne,
Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ovis aries clone 146 immunoglobulin heavy chain precursor (IGHV)
                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF172680.1 GI:5815228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA, partial
                                                                                                                                                                                                                                                                                                                                                                                    White, G.P., Meeusen, E.N.T. and Newton, S.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                   nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF172680
                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 369)
                       /codon_start=1
/codon_start=1
/product="immunoglobulin heavy chain precursor"
/protein_id="AAD52606.1"
/db_xref="GI:5815229"
/translation="QVQLQESGPSLMKPSQTLSLTCSVSGESLTSYSVVWVRQAPGKA
                                                                                                                       /gene="IGHV"
<1. .>369
                                                                                                                                                   /gene="IGHV"
1. .369
LEWVGAIYSDGSASYNPALKSRLSYTRDTSKSQVSLSLSSVTTEDTAVYYCARDRFSV
YGHAYLSIDYWGPGLLYTVSS"
                                                                                                                                                                                                  contortus"
                                                                                                                                                                                                                /tissue_type="abomasal lymph
/note="isolated from animals
                                                                                                                                                                                                                                                /clone="146"
                                                                                                                                                                                                                                                              /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                       /gene="IGHV"
                                                                                                                                                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                   . 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  369 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                              node"
                                                                                                                                                                                                              infected with Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                         Melbourne,
                                                                                                                                                                                                                                                                                                                                                                                                                                                gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MAM 01-SEP-1999
                                                                                                                                                                                                                                                                                                                                                         The Center
                                                                                                                                                                                                                                                                                                                                         Parkville
FEATURES
                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                            VERSION
                                                          TITLE
```

```
seq_documentation_block:
LOCUS AF172662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_scores:
                                                                                                     REFERENCE
                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-786-015-2 x AF172680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent
                                                                                                                                                                AUTHORS
TITLE
                                                        JOURNAL
                                                                                                                                                                                                                                                           ORGANISM
                                                                                     AUTHORS
                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151
                                                                                                                                                                                                                                                                                                                                                                                                                                                  348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51 CCTCTCCCTCACCTGCTCGGTCTCTGGATTCTCATTAACCAGCTATAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CAGGTGCAACTGCAGGAGTCGGGACCCAGCCTGATGAAGCCCTCACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTCCTGGTCACCGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               yLeuLeuThrValSerSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTGTCTATGGTCATGCTTAT...CTGTCCATCGACTACTGGGGCCCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SerValAsnGlyAspSerValProTyrGlyLeuAspTyrTrpSerProGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      erValThrThrGluAspThrAlaIleTyrTyrCysAlaLys.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCGTCACCAGGGACACCTCCAAGAGCCAAGTCTCCCTGTCACTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGTCTGGGTCCGCCAGGCTCCAGGAAAGGCACTGGAGTGGGTTGGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATATATAGTGATGGAAGTGCATCCTATAACCCGGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                  gb_om:AF172662
Direct Submission
Submitted (26-JUL-1999) School of Veterinary Science, 7
for Animal Biotechnology, The University of Melbourne,
Melbourne, Victoria 3052, Australia
Location/Qualifiers
                                                                                                                                              White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestina.
                                                                                                                                                                                                                                                                                                                                                 Ovis aries clone 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality:
                                                                                                             Unpublished
                                                                                                                                                                                                                                                          Ovis aries
                                                                                                                                                                                                                                                                                                                        AF172662
                                                                                   White, G.P., Meeusen, E.N.T. and Newton, S.E.
                                                                                                                                 nematode parasite Haemonchus contortus
                                                                                                                                                                                             Bovidae; Caprinae; Ovis.
1 (bases 1 to 345)
                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Peo
                                                                                                                                                                                                                                                                                                          AF172662.1
                                                                                                                                                                                                                                                                                                                                        mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                   (bases 1 to 345)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78
                                                                                                                                                                                                                                                                                                                                    partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AF172680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          453.00
4.118
88.710
                                                                                                                                                                                                                                                                                                          GI:5815193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112
                                                                                                                                                                                                                                                                                                                                        cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                       immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96
                                                                                                                                                                                                                                                                                                                                                                    345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to:
                                                                                                                                                                                                                                                                                                                                                                    đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83
                                                                                                                                                                                                                                                                                                                                                     heavy chain precursor
                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            74.194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         124
                                                                                                                                                                                                                                                                                                                                                                       linear
                                        Science, The Center
Melbourne, Parkville
                                                                                                                                                gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50
                                                                                                                                                                                                                               Pecora;
                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                       MAM 01-SEP-1999
                                                                                                                                                                                                                                                                                                                                                     (IGHV)
                                                                                                                                                                                                                               Bovoidea;
```

```
BASE COUNT
ORIGIN
                        seq_documentation_block:
LOCUS OAVRB7IG
DEFINITION O.aries mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
US-09-786-015-2 x AF172662
                                                                             seq_name: gb_om:OAVRB7IG
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: AF172662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                                                                                                   V_region
                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                298 GGAAATGGC....
                                                                                                                                                                                                                                                                                                                                                                                     101 TTGGTGTGGACTGGGTCCGCCAGGCTCCAGGAAAGGCACTGGAGTGGCTT 150
                                                                                                                                                                                                                                                                                                                                                           49
                                                                                                                                                                                                                                                                                                                                                                                                   33 ..GlyValSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                           51 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTAACCAACTATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               uLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                GlyGlyValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSe 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                        rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyr....
                                                                                                         CCTGGTCACCGTCTCCTCA 345
                                                                                                                                                                                         ValAsnGlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLe 115
                                                                                                                                                                                                                                                                                                                                GGTACCATATATAGTGGTGGAAGTACATACTATAACCCGGCCCTGAAACC 200
       0.arles mRNA for immunoglobulin (clone VRB7).
 249193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="QVQLQESGPSLVKPSQTLSLTCTVSGFSLTNYGVGVDWVRQAPG KALEWLGTIYSGGSTYYNPALKPRLSITRDTTKSQVSLSLSSVTTEDTAVYYCKRGNG DYWGPCLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     451.00
4.337
84.553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contortus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/product="immunoglobulin heavy chain precursor"
/protein_id="AAD52589.1"
/db_xref="GI:5815194"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene" IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="abomasal lymph node"
/note="isolated from animals infected with Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    102 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps: 3
Percent Identity: 76.423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67 t
                           ₫
                        mRNA linear MAM 04-FEB-1998 heavy chain variable region
                                                                                                                                                                                                                      297
                                                                                                                                                                                                                                                                                                                                                                                                                48
                                                                                                                                                                                                                                                                                                                                                                                                                                           100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32
                                                                                                                                                                                                                                                                         250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                 158
                                                                                                                      108
                                                                                                                                                                                                                                                                                                                                                                                                                                           D_segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                           58
                                                                                                                                                                                                                                                                                                                                                                                                   89
```

```
alignment_block:
US-09-786-015-2 x OAVRB7IG
                                                                                                                                                                                                                                                                                                               Align seg 1/1 to: OAVRB7IG
                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                           34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                        17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                    51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67.
                                                                                                                                                                                                                                                     1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
ATAAGCACTGATGGAAGCACAAGCTATAACCCGGCCCTGAAATCCCGGCT
                                                                                                                                                     CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTAACCGTCAATGCTG
                                                                                                                                                                                                                                  CAGGTGCGGCTGCAGGAGTCGGGACCCAGCCTGGTGAAGCCCTCACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 429)
Dufour, V. and Nau, F.
Sheep immunoglobulin mu heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z49193.1 GI:794139

Zi49193.1 GI:794139

diversity region; immunoglobulin;
joining region; variable region.
sheep.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (27-APR-1995)
1172, IBMIG, 40, avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dufour, V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 429)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="VH"
/note="D-JH region"
/note="D-JH region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                             450.50
4.095
88.710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="VH"
52. .429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="VH 349 . .429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MNPLWTLLEVLSAPRGVLSQVRLQESGPSLVKPSQTLSLTCTVS
GFSLTVNAVGWVRQAPGKVPEWLGSISTDGSTSYNPALKSRLSITRDTSKSQVSLSLS
SVTTEDTAVYYCARRTFSGGGFAVGDNIDYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rearranged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start-1
/product-"VH region precursor"
/protein_id-"CAA89052.1"
/db_xref-"GI:794140"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9940"
/clone="VRB7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'organism≔"Ovis aries"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'gene≖"VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocation/Qualifiers
                                                                                                                                                                                                                                                                                                               from: 1
                                                                                                                                                                                                                                                                                                                                                                                                             Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dufour V.,
du Recteur
                                                                                                                                                                                                                                                                                                             to: 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1mmunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Faculte des Sciences, CNR
Pineau, Poitiers, FRANCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               variable
                                                                                                                                                                                                                                                                                                                                                                                                               73.387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               region
                                                                          207
                                                                                                                                                                                                                                107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      heavy chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CNRS
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_documentation_block:
LOCUS BTU55202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: gb_om:BTU55202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                         V_region
                                                                        V_region
                                                                                                                                                                     V_region
                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       308
                                                                                                                        V_region
                                                                                                                                                                                                                     V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                              V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        114 yLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTGGTGGTGTTTGCTGTTGGCGATAACATCGACTACTGGGGCCCCAGG 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SerValAsnGlyAspSerValProTyrGlyLeuAspTyrTrpSerProGl 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTCCTGGTCACCGTCTCCTCA 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1 to 462)
Sinclair,M.C., Gilchrist,J. and Aitken,R.
The bovine immunoglobulin repertoire is founded upon diversification of a single VH gene family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (17-APR-1996) R. Aitken, Inst. Biomed. University, University Avenue, Glasgow G12 8QQ, University, University Avenue, Glasgow G12 8QQ, University, University Avenue, Glasgow G12 8QQ, University, Unive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Aitken,R.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sinclair, M.C. and Aitken, R. PCR strategies for isolation of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos taurus immunoglobulin partial cds, 5' end.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96144289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U55202.1 GI:1335958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mmunoglobulin-encoding bovine cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 462)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 462)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167 (1-2), 285-289 (1995)
                                                                                                                                                                                                                     /translation="MNPLWTLLFVLSAPRGVLSQVQLRESGPSLVKPSQTLSLTCTVSGFSLSSYGVGWVRQAPGKALECLGGISSGGSTAYNPALESRLSITKDNSKSQFSLSLSSVTIEDTATYYCAKGGAYASDGGRCANWGSGVGSGCCVDAWGQGLLVTVSSA"
58. . 147
                                                                                                                                                                          148.
                         /note="CDR2"
253. .348
                                                                                                                     /note="CDR1"
163. .204
                                                                        /note="FR2"
205. .252
                                                                                                                                                                                                                                                                                                                 /codon_start=1
/product="immunoglobulin heavy chain"
/protein_id="AAB01185.1"
/db_xref="GI:1335959"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Bos taurus"
/db_xref="taxon:9913"
/chromosome="21"
                                                                                                                                                                                         /note="FR1"
                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="leader"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Splenic mRNA; Clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /map="21q23-24"
                                                                                                                                                                                                                                                                                                                                                                                                                   .>462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             heavy chain mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ^{\rm of}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             variable region,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Life
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MAM 02-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sci,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glasgow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C_region
BASE COUNT
ORIGIN
                                             REFERENCE
                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_om:OAVR3IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_scores:
                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                              seq_documentation_block:
                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: BTU55202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-786-015-2 x BTU55202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
AUTHORS
TITLE
                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                              458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 er
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATAAGTAGTGGTAGAAGCACAGCCTATAATCCAGCCCTGGAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGCTAGTGATGGTGGACGTTGTGCCAACTGGGGTAGTGGTGTTGGTTC 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGTGACAATTGAGGACACGGCCACATACTACTGTGCGAAAGGTGGTGCT 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             erValThrThrGluAspThrAlaIleTyrTyrCysAlaLys.........
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAGGCTGGGTCCGCCAGGCTCCAGGGAAGGCGCTGGAGTGTCTTGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTGAGCAGCTATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGTTGTTGCGTCGATGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .....SerValAsnGlyAspSerValProTyrGly......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .....LeuAspTyrTrpSerProGlyLeuLeuThrValSerS 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                              459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
Dufour, V.
                                                                                                                                                                                                                                                                                                               O.aries mRNA for immunoglobulin mu
                                                                                                                                              Ovis aries
                                                                                                                                                                  sheep.
                                                                                                                                                                                    249161.1 GI:794111
diversity region; immunoglobulin;
joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
                                                                   Bovidae; Caprinae; Ovis.
                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                          OAVR3IG
                                                                                                                                                                                                                                                                                      (clone VR3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ratio:
                                          (bases 1 to 453)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           86
Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      349. .426

/note="CDR3"

427. .459

/note="FR4"

460. .>462

a 132 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 446.50
4.059
82.090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Identity: 70.149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138
                                                                                                                                                                                                                                                                                                                                     453 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ф
0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                  immunoglobulin
                                                                                                                                                                                                                                                                                                            mRNA linear MAM 04-FEB-1998 heavy chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
```

heavy chain;

97

50 157

207

257

```
JOURNAL
MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-786-015-2 x OAVR3IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: OAVR3IG
                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                            188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D_segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                            338
                                                                                288
                                                                                                                                     238 ATATATACTCGAGGAAGCATATACTATAACCCGGCCATGAAATCCCGGCT
                                                                                                                                                                                                                                                 138 CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTAACCAGCAATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sig_peptide
101 GlyAspSerValProTyrGly.....LeuAspTyrTrpSerProGlyLe 115
                        67
                                                                                                                                                                 51
                                                                                                                                                                                                         17
                                                                                             uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                    ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                CAGCATCACCAGGGACACCTCTAAGAGCCAAGTCTCCCTGTCACTGAGCA 337
                                                                                                                                                                                                                                                              rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                            TAGGCTGGGTCCGCCAGGCTCCAGGAAAGGCACTGGAGTGGGTTTGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                              Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dufour, V., Mailinge, S. and Nau, F.
The sheep Ig variable region repertoire consists of a single VH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (27-APR-1995) Dufour V., Faculte 1172, IBMIG, 40, avenue du Recteur Pineau,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96310953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1172, IBMIG, 40, av. 2 (bases 1 to 453)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Immunol. 156 (6), 2163-2170 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95
                                                                                                                                                                                                                                                                                                                                                                                                                                 444.50
4.116
87.805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/product="YH region precursor"
/proteain_id="CAA.89030.1"
/db_xref="GI:794112"
/translation="MNPLWTLEPVLSAPRGVLSQVQLQESGPSLVKPSQTLSLTCTVS
GFSLTSNAVGWYQAPGKALEWVGFTYTRGSTYYNPAMKSRLSITRDTSKSQVSLSLS
SYTTEDTAVYYCARDSGYGYAYGCSIDYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="VH region" 379. .453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="D-JH region"
139 c 119 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rearranged
31. .453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="VR3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 453
                                                                                                                                                                                                                                                                                                                                                               from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                               ç
Ö
                                                                                                                                                                                                                                                                                                                                                               453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                  73.171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       des Sciences, CNRS URA Poitiers, FRANCE, 86022
                                                                                                          84
                                                                                                                                     287
                                                                                                                                                                 67
                                                                                                                                                                                            237
                                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                187
                                                                                                                                                                                                                                                                           34
                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        385
                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                            156
                                                                                106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
```

```
alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                        alignment_block:
US-09-786-015-2 x BTU49773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
LOCUS BTU49773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_om:BTU49773
                                                                                                                                                                                    Align seg 1/1 to: BTU49773
                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                        17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                            uLeuLeuThrValSerSer 121
||||:::||||||||||
|CCTGGTCACCGTCTCCTCA 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus immunoglobulin mRNA, partial cds. U49773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 (bases 1 to 486)
Berens, S.J., Wylie, D. and Lopez, O.J.
Direct Submission
Submitted (22-FEB-1996) Osvaldo J. L
University of Nebraska, 325 Manter H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 486)
Berens, S.J., Wylle, D.E. and Lopez, O.J.
Use of a single VH family and long CDR3s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cattle Ig heavy chains
Int. Immunol. 9 (1), 189-199 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U49773.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9043960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                              104
                                                                                                                                                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="immunoglobulin heavy chain variable region"
/protein_id="AAA98654.1"
/protein_id="AAA98654.1"
/db_xref="GI:1293592"
/translation="LRLQRLRGVVTLICSKMNPLWTLLFVLSAPRGVLSQVQLRESGP
SIVKPSQTLSLTCTISGFSLSSYGVNWVRQAPGKALECLGGISSGGNTGYNPALKSRL
SITKDNSKSQVSLSVSSVTPEDTATYYCAKSSLGWAYGTDYYQSYCVDAWGQGLLVTV
                                                                                                                                                                                                                                                                               444.00
4.111
83.721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:1293591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Bos taurus"
/db_xref="taxon:9913"
/cell_type="heterohybridoma"
/tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .>486
                                                                                                                                                                                                                                                                                                                                                                                                              143 c
                                                                                                                                                                                      from: 1 to: 486
                                                                                                                                                                                                                                                                                 Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                            131 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Osvaldo J. Lopez, Biological 325 Manter Hall, Lincoln, NE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      486 βp mRNA
rearranged hea
                                                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                              108
                                                                                                                                                                                                                                                                                 71.318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               heavy
                                                                                                                                                                                                                                                                                                                     129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
chain v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   434
                                    205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MAM 16-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sciences,
68588-0118,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of
f
```

73.554

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_documentation_block:
LOCUS OAVR21IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: gb_om:OAVR21IG
                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            256
       D_segment
                                                       V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101
                                                                                          sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCAGTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ....TrpSerProGlyLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGTGACACCTGAGGACACGGCCACATACTACTGTGCAAAAAGTTCTCTT 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCCTGGGGCCAAGGACTCCTGGTCACCGTCTCCTCA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTTGGGCT.....TATGGTACTGATTATTATCAGAGTTACTGCGTTGA 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATAAGCAGTGGTAAACACAGGCTATAACCCAGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (27-APR-1995) Dufour V., Faculte 1172, IBMIG, 40, avenue du Recteur Pineau, 2 (bases 1 to 449) Dufour, Malinge, S. and Nau, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    249166.1 GI:794107 diversity region; immunoglobulin; immunoglobulin heavy chain; joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          O.aries mRNA for immunoglobulin mu heavy chain variable region (clone VR21).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dufour, V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OAVR21IG
                                                                                                                                                                                                                                                                                                                                                                                                                              96310953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The sheep Ig variable region repertoire consists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sheep
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 449)
                                                                                                                                                                                                                                                                                                                                                                                                                                           mmunol. 156 (6), 2163-2170 (1996)
                                                                                                                                                                                                                                                 /gene="VH"
39, ,>449
                                                       /gene="VH"
90. .449
                                                                                                                                                                                                                                                                                                                                      /organism="Ovis aries'
/db_xref="taxon:9940"
/clone="VR21"
                                                                                                                        /translation="MNPLWTPLFVLSAPRGVLSQVRLQESGPSLVKPSQTLSLTCTVS
GFSLTTYSVGWVRQAPGKALEWLGGIENDGCAGYHPALKSRLSITRDTSKSQVSLSLS
       /product="VH region"
387. .449
                                                                                                          SVTSEDTAMYYCVRSFFGGKYWGYWGPGLLVTVSS"
                                                                                                                                                           /codon_start=1
/product="VH region precursor"
/protein id="CAA89035.1"
/db_xref="GI:794108"
                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                     /gene="VH"
                                                                                                                                                                                                                                 /gene="VH"
                                                                                                                                                                                                                                                                                                     /rearranged
                                                                                                                                                                                                                                                                                                                      /tissue_type="spleen"
                                                                                                                                                                                                                                                                                   .449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            449 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                des Sciences,
Poitiers, FRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of a single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MAM 04-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FRANCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CNRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  URA
                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: gb_om:AF172670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                          seq_documentation_block:
                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-786-015-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: OAVR21IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                            TITLE
                     JOURNAL
                                                                                        JOURNAL
                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                               437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATAGAAAATGATGGATGTGCAGGCTATCATCCAGCCCTTAAGTCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGTGACAAGTGAGGACACGGCCATGTACTACTGTGTGAGAAGTTTTTTC 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCATCACCAGGGACACCTCCAAGAGCCAAGTCTCCCTGTCACTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTCTCCCTCACCTGCACGGTCTCCGGCTTCTCATTAACCACCTACAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGTGCGGCTGCAGGAGTCGGGACCCAGCCTGGTGAAGCCCTCACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACCGTCTCCTCA 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTGGAAAATAC...TGGGGC...
                                                                                  Unpublished
                                                                                                    White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library abomasal lymph node of sheep infected with the gastroi nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                 Ovis aries
                                                                                                                                                                                                                                                                                                                    mRNA, partial cds. AF172670
                                                                                                                                                                                                                                                                                                                                                      Ovis aries clone 57 immunoglobulin heavy chain precursor (IGHV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality:
Submitted (26-JUL-1999) School of Veterinary for Animal Biotechnology, The University of \mbox{\sc M}
                                    2 (bases 1 to 366)
White, G.P., Meeusen, E.N.T. and Newton, S.E.
Direct Submission
                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                     AF172670.1 GI:5815209
                                                                                                                                                                                                                                                                                                                                                                          AF172670
                                                                                                                                                                                             Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
                                                                                                                                                                             (bases 1 to 366)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OAVR21IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="D-JH region"
138 c 123 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     443.50
4.069
90.083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , TACTGGGGCCCAGGACTCCTAGT
                                                                                                                                                                                                                                                                                                                                                                      366 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ţo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95
                                                                                                                                                                                                                                                                                                                                                                          mRNA
```

100 345

295

245

195

436

linear

MAM 01-SEP-1999

Melbourne, Science,

The Center, Parkville,

library from the gastrointestinal

```
alignment_block:
US-09-786-015-2 x AF172670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                          seq_name: gb_om:AF172674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1 to: AF172670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                        201 CGGCATCACCAGGACACCTCCAAGAACCAGGTCTCCCTGTCACTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                            301 GATAATACTTATGGACCGGCATATATCGACTACTGGGGCCCCAGGACTCCT
                                                                                                                                                                                                                                                                                                               151 ATATGGAGTAGTGGGAATACAGACTATAACCCGGCCCTGAAATCCCGACT
                                                                                                                                                                                                                                                                                                                                                                     101 TAGGCTGGGTCCGCCAGGCTCCAGGAAAGGCATTGGAGTGGGTTGGTGCC
                                                                                                                                                                                                                84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                          uLeuThrValSerSer 121
                                                                                                                                                         ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                      uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                       GGTCACCGTCTCCTCA
                                                                                                                                                                                                  GCGTCACAACTGAGGACACGGCCGTGTACTACTGTGTAAGACATTGGTAT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Melbourne, Victoria 3052, Australia Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="immunoglobulin heavy chain precursor"
/protein_id="aAD52597.1"
/db_xref="GI:5815210"
/translation="0YQLQESGPSLVKPSQTLSLTCTVSGLSLTNYAVGMVRQAPGKA
LEWVGAIWSSGNTDYNFALKSRLGITRDTSKNQVSLSLSSVTTEDTAVYYCVRHWYDN
TYGFAYIDYMGFGLLYTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             442.50
4.060
89.344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="IGHV"
<1. .>366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="IGHV"
1. .366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contortus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="abomasal lymph
/note="isolated from animals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="57"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              107 c
                                                                                       366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Identity: 72.131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          с
6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         node"
infected with Haemonchus
                                                                                                                                                                                                                                                        250
                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                  150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50
                                                                                                                                            350
                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                                                                                                                                                                                                                                                               200
                 MAM 01-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                  alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                              151
                                                                                    101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                V_region
                                                        51
                                                                                                                34
                                                                                                                                          51
                                                                                                                                                                      17
  uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                     Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ovis aries
                                                                                                                                                                                                                                                                                                                                          Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                          08
                                                                                                                                                                                                                                                                                                                                                                                                                           а
```

```
alignment_block:
US-09-786-015-2 x AF172674
                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: AF172674
                                                                                                                                                                                                                                                                                                   alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                            rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                               ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                   TACACTGGGTCCGCCAGGCTCCAGGAAAGGTGCCGGAGTGGCTTGGTAGT 150
                                                                                                                                                                                                    CCTCTCCCTCACCTGCACGGTCTCTGGATTCTCATTAACCTACAATGCTG
ATCAGCAGTGGTAGGAAGCACATACTATAATGCGGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (26-JUL-1999) School of Veterinary Science, for Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        White, G.P., Meeusen, E.N.T. and Newton, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF172674.1 GI:5815217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA, partial cds
AF172674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 366)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 366)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               442.50
4.097
87.097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /Godon_start=1
/product="immunoglobulin heavy chain precursor"
/protein_id="AAD52601.1"
/protein_id="AAD52601.1"
/db_xref="GI:5815218"
/translation="QVOLOESEPSLVKPSQTLSLTCTVSGFSLTYNAVHWVRQAPGKV
PEWLGSISSGGSTYXNAALKSRLSITRDTSKSQVSLSLSRVTTEDSAVYYCASDDGDG
VVDISYIHYWGPGLLYTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contortus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="abomasal lymph node"
/note="isolated from animals infected with Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="92"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               111 c
                                                                                                                                                                                                                                                                                                                                                                                                         from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97 g
                                                                                                                                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                         Ċ:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The Center, Parkville,
```

```
REFERENCE
AUTHORS
TITLE
                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
LOCUS OAVRB15IG
                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name: gb_om:OAVRB15IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                      D_segment
                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                201
                                                                                                                                                                                      V_region
                                                                                                                                                                                                                     sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               yLeuLeuLeuThrValSerSer 121
||||||||:::|||||||||||
ACTCCTGGTCACCGTCTCCTCA 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGATGGTGTTGTCGATATATCCTAT . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGTGACAACTGAGGACTCGGCCGTGTACTACTGTGCA...AGCGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyAspSerVal.....ProTyrGlyLeuAspTyrTrpSerProGl 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          456 bp O.arles mRNA for immunoglobulin (clone VRB15).
     Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (27-APR-1995) Dufour V., Faculte 1172, IBMIG, 40, avenue du Recteur Pineau, 2 (bases 1 to 456) Dufour, V., Malinge, S. and Nau, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dufour, V.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 diversity region; immunoglobulin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96310953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The sheep Ig variable region repertoire consists of a single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Z49159.1 GI:794131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 456)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Immunol. 156 (6), 2163-2170 (1996)
                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                         /gene="VH"
37
                                                                                                                                                                                                                                                                                                                                                                                                        /rearranged
                                                                                                                                                                                   /gene="VH"
88. .456
                                                                                                                                      /product="VH
385. .456
                                                                                                                                                                                                                                                     /translation="MNPLWTLLEVLSAPRGVLSQVQLQGSGPSLVKPSQTLFLTCTVS
GFSLTSYAVNWVRQAPGKALEWVGNILNDGNTYYNPALKSRLSISRDTSKSQVSLSLS
                                                                                 /note="D-JH region"
138 c 112 g
                                                                                                                                                                                                                                      SVTTEDTAVYYCARGGIYYSTWTGINYWGPGLLVTVSS'
                                                                                                                                                                                                                                                                                       /product="VH region precursor"
/protein_id="CAA89028.1"
/db_xref="GI:794132"
                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VRB15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
1. .456
     442.00
                                                                                                                                                                     /gene="VH"
                                                                                                                                                                                                                                                                                                                                                       /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="spleen"
                                                                                                                       'gene="VH"
                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                        .>456
                                                                                                                                                      region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .ATCCACTACTGGGGCCCAGG
     Length:
                                                                                     106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Faculte des Sciences, CNRS
Pineau, Poitiers, FRANCE, 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ear MAM 04-FEB-1998
variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               heavy chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86022
                                                                                                   JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-786-015-2 x OAVRB15IG
                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_om:OAVR22IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
LOCUS OAVR22IG
                                                                                   FEATURES
                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: OAVRB15IG
                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   444 CACCGTCTCCTCA 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144 CCTCTTCCTCACCTGCACGGTCTCTGGATTCTCATTAACCAGCTATGCTG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94 CAGGTTCAGCGTCAGGGGTCGGGACCCAGCCTGATAAGCCCTCACAGAC 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCATCTCCAGGGACACCTCCAAGAGCCAAGTCTCCCTGTCACTGAGCA 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCTAAATGATGGAAATACATACTATAATCCGGCCCTGAAATCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAACTGGGTCCGCCAGGCTCCAGGAAAGGCACTGGAGTGGGTTGGTAAC 243
                                                                                                                                                                                                                                                                                                                                                   sheep.
Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                     (clone VR22).
Z49157
                                                                                                    9
                                                                                                                                                                  The sheep Ig variable region repertoire
                                                                                                                                                                                   2 (bases 1 to 434)
Dufour, V., Malinge, S. and Nau, F.
                                                                                                                                                                                                                   Submitted (27-APR-1995) Dufour V., 1172, IBMIG, 40, avenue du Recteur
                                                                                                                                                                                                                                                  Dufour, V.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                  diversity region; immunoglobulin; joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                    Z49157.1 GI:899352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    O.aries mRNA for
                                                                                                                     96310953
                                                                                                                                                                                                                                                                                                     Bovidae; Caprinae; Ovis
                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OAVR22IG
                                                                                                                                                    family
                                                                              Jul 16, 1995 this sequence
Location/Qualifiers
                                                                                                                                                                                                                                                                                    (bases 1 to 434)
                                                                                                                                 Immunol. 156 (6), 2163-2170 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.131
88.430
/tissue_type="spleen'
                 /clone="VR22"
                                  /db_xref="taxon:9940"
                                               organism="Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                434 bp
immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps: 0
Percent Identity: 72.727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   434
                                                                                                                                                                                                                   Recteur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to:
                                                                                                   version replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                                                                                                                                                                     immunoglobulin
                                                                                                                                                                                                                   Faculte des Sciences, CNRS URA Pineau, Poitiers, FRANCE, 8602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                heavy chain
                                                                                                                                                                   consists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                 gi:794109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ear MAM 04-FEB-1998 variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                293
                                                                                                                                                                   of.
                                                                                                                                                                                                                                                                                                                                                                                                   heavy chain;
                                                                                                                                                                  single VH
```

```
BASE COUNT
ORIGIN
 ACCESSION
                         DEFINITION
                                        seq_documentation_block:
LOCUS BTU49778
                                                                             seq_name: gb_om:BTU49778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-786-015-2 x OAVR22IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: OAVR22IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                            422
                                                                                                                                                                   393
                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                            296
                                                                                                                                                                                                                                                                                                                                 246
                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                                                                            146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D_segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sig_peptide
                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                    34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uThrValSerSer 121
                                                                                                                                                                                 GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                                                         ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                           rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                                                                                                 ATATGGAGTGATGGAAGTACAGACTATAAACCGGCCCTGAAATCCCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTCTCCCTCACCTGCACGGTCTCTGGATTTTCATTAACCAGCCGTGGTG 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity:
                                                                                                            CACCGTCTCCTCA 434
                                                                                                                                                                                                                                                                                                     uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS 84
                                                                                                                                                                                                                                                                                                                                                                                     TTAACTGGGTCCGCCAGGCTCCAGGAAAGTCACTGGAGTGGGTTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality:
Ratio:
                         Bos taurus immunoglobulin rearranged
mRNA, partial cds.
U49778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="VH"
90. .434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="VH"
/product="VH region"
387. .434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MNPLWTLLFVLSAPRGVLSQVQLQESGPCLVKPSQTLSLTCTVS
GFSLTSRGVNWVRQAPGKSLEWVGGIWSDGSTDYKPALKSRLSITRDTSRSQVSLSLS
SVTSEDTAMYYCAKSYFEYWGPGLLVTVSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         441.00
4.240
85.950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note-"D-JH region"
131 c 116 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/product="VH region precursor"
/protein_id="CAA89026.1"
/db_xref="GI:899353"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene-"VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /rearranged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'gene≖"VH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                 TTCGAGTACTGGGGCCCAGGACTCCTGGT 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent
                                     480 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to: 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                      mRNA
                        heavy chain variable region
                                     linear
                                                                                                                                                                                                                                                                                                                                 295
                                                                                                                                                                                                                                                                                                                                                                                     245
                                      MAM 16-AUG-2001
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                       alignment_block:
US-09-786-015-2 x BTU49778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1 to: BTU49778
                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                         347
                                                            297
                                                                                                                                                                                 197
                                                                                                                      247 ATAAGCAGTGGTAGGAAGCACAGGCTATAACCCAGCCCTGAAATCCCGGCT
source
                                                                                        67
                                                                                                                                     51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe :::|||||||||||
                                                                                                                                                                                                34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                            uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                 TAAGCTGGGTACGCAAGGCTCCAGGGAAGGCGCTGGAGTGGCTTGGTGAT
                                                            CAGCATCACCAAGGACAACTCCAAGAGCCAAGTCTCTCTGTCAGTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Berens, S.J., Wylle, D.E. and Lopez, O. Use of a single VH family and long Coattle Ig heavy chains
Int. Immunol. 9 (1), 189-199 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (22-FEB-1996)
University of Nebraska,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (bases 1 to 480)
Berens, S.J., Wylie, D.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     U49778.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9043960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/product="immunoglobulin heavy chain variable region"
/protein_id="AAA98659.1"
/db_xref="GI:1293602"
/translation="WRLYGVVTLICSKMNPLWTLLFVLSAPRGVLSQVQLRESGPSLV
KPSQTLSLTCTVSGFSLSSYXVSWVRKAPGKALEWLGDISSGGSTGYNPALKSRLSIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KDNSKSQVSLSVSSVTPEDTATYYCAKDRGVDYSGYGYGYGYDYVDAWGQGLLVTVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                    440.50
4.117
83.594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /dev_stage="150 day fetus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cell_type="heterohybridoma"
/tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:1293601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .>480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                            from:
                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and Lopez, O.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138 g
                                                                                                                                                                                                                                                                                                                                                              Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Osvaldo J. Lopez,
325 Manter Hall, I
                                                                                                                                                                                                                                                                                                                                                            to: 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDR3s
                                                                                                                                                                                                                                                                                                                                                                                                                                     70.312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , Biological
Lincoln, NE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                          84
                                                                                                                       296
                                                                                                                                                   67
                                                                                                                                                                                 246
                                                                                                                                                                                                                                          196
                                                                                                                                                                                                                                                                                                    146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sciences,
68588-0118,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of.
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
ORGANISM
                                                                                                   alignment_block:
US-09-786-015-2 x AF172659
                                                                                                                                                                                  alignment_scores:
Quality:
                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
LOCUS AF172659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_name:
                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                  Align seg 1/1 to: AF172659
                                                                                                                                                    Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                                                                                             V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
GTTGATTATAGTGGTTATGGTTATAGTTATGACTACGTCGATGC 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GlyAspSerValProTyrGly.....LeuAspTy 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_om: AF172659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 351) White, G.P., Meeusen, E.N.T. and Newton, S.E. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              White,G.P., Meeusen,E.N.T. and Newton,S.E. A single-chain variable region immunoglobulin library from the abomasal lymph node of sheep infected with the gastrointestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ovis aries clone 1 immunoglobulin heavy chain precursor (IGHV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (26-JUL-1999) School of Veterinary Science, I for Animal Biotechnology, The University of Melbourne, Melbourne, Victoria 3052, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA, partial cds.
AF172659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sheep.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nematode parasite Haemonchus contortus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF172659.1 GI:5815187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 351)
                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                        D
                                                                                                                                                                                                                                                                      /translation="QVQLQESGPSLVKPSQTLSLACTVSGFSLTSNSVGWVRQAPGKVPEWLGGISRSGSTYYNDALKSRLTITRDTSKSQVSLSLSSVTSEDTAVYYCADSLYVHNTDYWGPGLLVTVSS"
109 c 95 g 68 t
                                                                                                                                                    440.00
4.151
87.603
                                                                                                                                                                                                                                                                                                                                       /product="immunoglobulin heavy chain precursor"
/protein_id="AAD52586.1"
/db_xref="GI:5815188"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contortus"
                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="abomasal lymph node"
/note="isolated from animals infect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Ovis aries"
/db_xref="taxon:9940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                          /gene="IGHV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="1"
                                                                from:
                                                                                                                                                    Percent Identity:
                                                                                                                                                                                                                                                                     95 g
                                                                    ;
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dd
                                                                                                                                                                    Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                    72.727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               infected with
                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Haemonchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MAM 01-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The Center, Parkville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bovoidea;
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                       CDS
                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101 GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
:::::: ||||||||:::||||||||:::
298 ......TATGTCCACAATACCGACTACTGGGGCCCAGGACTCCTGGT 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117 uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151 ATAAGTAGAAGTGGGAGCACATACTATAACCCGGCCCTGAAGTCCCGGCT 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe :::||| ::::: ||| |||||| ||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACCATCACCAGGGACACCTCCAAGAGCCAAGTCTCCCTGTCACTGAGCA 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACCGTCTCCTCA 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGTGACAAGTGAGGACACGGCCGTGTACTACTGTGCAGATAGTCTC...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_om:OAVRA10IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z49175.1 GI:794118
diversity region; immunoglobulin; immunoglobulin
joining region; variable region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   O.aries mRNA for immunoglobulin (clone VRA10).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea Bovidae; Caprinae; Ovis.

1 (bases 1 to 456)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                   The
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (27-APR-1995) Dufour V., Faculte des Sciences, CNR 1172, IBMIG, 40, avenue du Recteur Pineau, Poitiers, FRANCE,
                                                                                                                                                                                                                                                                                                                                           96310953
                                                                                                                                                                                                                                                                                                                                                                                                                  Dufour, V., Malinge, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dufour, V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sneep.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z49175
                                                                                                                                                                                                                                                                                                                                                                              family
                                                                                                                                                                                                                                                                                                                                                                                                                                1172, IBMIG, 40, avenue
2 (bases 1 to 456)
                                                                                                                                                                                                                                                                                                                                                          Immunol. 156 (6), 2163-2170 (1996)
                                                                                                                                                                                                                                                                                                                                                                                               sheep Ig variable region repertoire
/Codon_start=1
//codon_start=1
//product="VH region precursor"
//protein_id="CAA89044.1"
//db_xref="GI:794119"
/translation="MNPLWTLLFVLSAPRGVLSQVQLEESGPSLVKPSQTLSLTCTVS
GFSLTSNNVGWYRQAPGKALEWYGDIYAGGSKEYSPALKPRLSITRDTSKSQVSLSLS
SVTTEDTAVYYCARDQPSSGVFGDYDYWGPGLLVTVSS"
                                                                                                                                                     /gene="VH"
37. .>456
                                                                                                                                                                                                                                            /organism="Ovis aries"
/db_xref="taxon:9940"
/clone="VRA10"
                                                                                                                               /gene="VH"
                                                                                                                                                                                                                          /tissue_type="spleen"
                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                         rearranged
                                                                                                                                                                                                                                                                                                                                                                                                                 and Nau, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        456 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ם
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA linear MAM 04-FEB-1998 heavy chain variable region
                                                                                                                                                                                                                                                                                                                                                                                               consists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67
                                                                                                                                                                                                                                                                                                                                                                                               of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             heavy chain;
                                                                                                                                                                                                                                                                                                                                                                                             single VH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CNRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bovoidea;
```

```
alignment_scores:
Quality: 440.00
Ratio: 4.151
Percent Similarity: 87.603
                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                          alignment_block:
US-09-786-015-2 x OAVRA10IG
                                                                                                                                                                                                                                                                           Align seg 1/1 to: OAVRA10IG from: 1 to: 456
                                                                                                                                                                      V_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                 sig_peptide
                                                                                                                                    244 ATATATGCTGGTGGAAGTAAAGAATATAGCCCGGCCTGAAACCCCGGCT 293
                                                                                                                                                                                                                                                                                                                                                                                                        D_segment
                                                                                                                                                                                                                                        51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                               100
                                                                                                                                                                                                                                                                                                                                                                            37..87
/gene="VH"
88..456
/gene="VH"
/product="VH region"
385..456
/gene="VH"
/note="D-JH region"
a 136 c 125 g
                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                   Length: 121
Gaps: 0
Percent Identity: 71.901
                                                                                                                                                                                                                                                                                                                                                                               95 t
                                                                                                                                                                      243
                                                                                                                                                                                                                                           143
```

. .

THIS PAGE BLANK (USPTO)

```
\sidesiygqdata\geneseq\geneseqn\embi\na2001.Dat:AAA00300\tag{1} + Sidesi\gqdata\geneseq\geneseqn\embi\na201A.Dat:AAH76441\tag{1} + 41\squareseq\geneseqn\embi\na201A.Dat:AAH76441\tag{1} + 41\squareseq\geneseqn\embi\na201A.Dat:AAH76441\tag{1} + 41\squareseq\geneseqn\embi\na201A.Dat:AAH76441\tag{1} + 41\squareseq\geneseqn\embi\na201A.Dat:AAH76441\tag{1} + 41\squareseq\geneseqn\embi\na201A.Dat:AAH76441\tag{1} + 41\squareseq\geneseqn\embi\na201A.Dat:AAH76443\tag{1} + 41\squareseq\geneseqn\embi\na201A.Dat:AAH76443\tag{1} + 41\squareseq\geneseqn\embi\na1997.Dat:AAA01397\empi\na201A.Dat:AAA01397\empi\na201A.Dat:AAA01397\empi\na201A.Dat:AAA01397\empi\na201A.Dat:AAA01397\empi\na201A.Dat:AAA01397\empi\na201A.Dat:AAA01397\empi\na201A.Dat:AAA01397\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01393\empi\na201A.Dat:AAA01393\empi\na201A.Dat:AAA01393\empi\na201A.Dat:AAA01393\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AAA01313\empi\na201A.Dat:AA01313\empi\na201A.Dat:AA01313\empi\na201A.Dat:AA01313\empi\na201A.Dat:AA01313\empi\na201A.Dat:AA01313\empi\na201A.Dat:AA01313\empi\na201A.Dat:AA01313\empi\na2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 score_list:
Sequence Strd Orig ZScore EScore Len ! Doc Sequence Strd Orig ZScore EScore Len ! Doc /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT:AAA08400 + /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:AAH76441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database sequences: 1736436
Database length: 858457221
Search time (sec): 373.090000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Search information block:
Query: US-09-786-015-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -MODEL-frame+_p2n.model -DEV=xlp
-Q-/cgn2_1/USPTO_spool/US09786015/runat_12082002_092423_77/app_query.fasta_1.347
-DB=N_Geneseq_032802 -OFMT=fastap -SUFFIX=p2n.rng -GAPOP=12.000
-GAPEXT=4.000 -MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000
-GAPOP=4.500 -GAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-FGAPOP=6.000 -FGAPEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-DELOP=6.000 -DELEXT=7.000 -START=1 -MATRIX-blosum62
-TRANS-human40.cd1 -LIST=45 -DOCALIGN=200 -THR_SCORE-pct
-THR_MAX=100 -THR_MIN=0 -ALIGN=15 -MODE-LOCAL -OUTFMT=PfS
-NORM-ext -HEAPSIZE=500 -MINLEN-0 -MAXLEN-200000000
-USER-US09786015_@CGN1_1_575 -NCPU=6 -ICPU=3 -LONGLOG
-DEV_TIMEOUT=120 -WARR_TIMEOUT=30 -NO_XLPXY -WATT -THDEPANG-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query length: 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of: US-09-786-015-2 to: N_Geneseq_032802:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Results were |
Copyright (c)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N_Geneseq_032802:*
sequences: 1736436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                produced by 1993-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            y the GenCore
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    software,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           out_format :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Documentation
400 + 614.00 10
6441 + 417.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                version
               4417.00
491.00
391.00
391.00
391.00
391.00
388.50
388.50
388.50
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
388.40
3
               718.45
687.03
               1. 3e - 29

1. 3e - 29

2. 4e - 29

3. 9e - 29

3. 9e - 29

4. 8e - 29

7. 6e - 29

8. 6e - 29

8. 6e - 29

9. 6e - 28

8. 6e - 29

9. 6e 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .6e-52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.4e-32
2.4e-32
                                                                                                                                                                                                                                                                                  alignment_block:
US-09-786-015-2 x AAA08400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
```

Percent Similarity:

Quality:

Ratio:

614.00 5.074 100.000

Gaps: Percent Identity:

100.000

Length:

seg 1/1

ç 6:

AAA08400

from:

 \vdash

6

363

```
seq_documentation_block:
ID AAA08400 standard; DN
XX
AC AAA08400;
XX
DT 13-JUL-2000 (first e
XX
DT 13-JUL-2000 (first e
XX
Carcinoembryonic anti
XW
Carcinoembryonic anti
XX
Carcinoembryonic anti
XX
Carcinoembryonic anti
XX
Ancer therapy; 98GB-C
XX
DR WPI; 2000-375618/32.
XX
Claim 9; Page 13-14;
XX
Claim 9; Page 13-14;
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC The present inventior
CC characterised by an acid-washed enzyme-li
XX
CC characterised by an acid-washed enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:AAX78161
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1990.DAT:AAQ04467
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1992.DAT:AAQ21096
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1997.DAT:AAY794586
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1995.DAT:AAQ76272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:AAA08400
                                                                                                                                                                                                                                                                     The present invention describes a high-affinity monoclonal antibody characterised by an acid-washed enzyme-linked immunosorbent assay (EIA). The antibody is used in cancer therapy. Association of the new antibody with an antigen is favoured over dissociation in vivo and they therefore have longer localisation times at target sites, resulting in a higher concentration of antibodies localised at the target sites. Targeting the antibody to a site in vivo is improved. The concentration of antibody does not need to be too high which reduces side-effects and costs of the concentration of antibody to a site in vivo is improved. The concentration of antibody to a site in vivo is improved. The concentration of antibody to a site in vivo is improved. The concentration of antibody to a site in vivo is improved. The concentration of antibody to a site in vivo is improved. The concentration of antibody the concentration of antibody to a site in vivo is improved. The concentration of antibody th
                                                                                                                                         therapy. The present sequence encodes the heavy chain variable region of a monoclonal antibody having affinity for carcinoembryonic antigen of a monoclonal antibody having affinity for carcinoembryonic antigen (CEA, a tumour associated antigen), which is used in the exemplificat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A new high-affinity monoclonal antibody acid-washed enzyme-linked immunosorbent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-375618/32.
P-PSDB; AAY82528.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Carcinoembryonic antigen; CEA; sheep; monoclonal antibody; tumour associated antigen; anti-carcinogenic; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Carcinoembryonic antigen affinity antibody heavy chain variable region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (KSBI-) KS BIOMEDIX LTD.
                                                                                                         present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Page 13-14; 21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98GB-0018915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-GB02729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA;
                  A; 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        363
                  Ç
                  93
                  ç;
                  82
                  Τ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      that is characterized assay for use in cance
                  0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       379
379
379
379
379
                                                                                                                                                           exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .50
.50
.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           658
658
658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 45
. 45
. 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .5e-
```

17

```
seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name:
           Novel antibody-toxic group conjugate comprising an antibody that recognizes a molecule expressed only on activated T cells, useful for modulating immune response for treating autoimmune disorder, allergic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; CTLA4; cytotoxic T lymphocyte associated antigen 4; anti-CTLA4; immunosuppressive; immunomodulator; antiallergic; vaccine; antibody; T cell; humanised antibody; autoimmune disorder; graft rejection;
                                                                                                                      O'Hara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
response
                                                                             P-PSDB;
                                                                                                                                        Carreno
                                                                                                                                                                                                                                  26-JAN-2001; 2001WO-US02653
                                                                                                                                                                                                                                                                 02-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 allergy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Humanised anti-CTLA4 heavy chain cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAH76441 standard; cDNA; 460 BP
                                                                                                                                                                     (GEMY ) GENETICS INST INC
                                                                                                                                                                                                    27-JAN-2000; 2000US-0178473
                                                                                                                                                                                                                                                                                               WO200154732-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCGTCACCAGGGACACCTCCAAGAGCCAATTCTCCCTGTCACTGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACCGTCTCCTCA 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTGACAGTGTTCCTTATGGTTTGGACTACTGGAGCCCAGGACTCCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGTGACTACTGAGGACACGGCCATTTACTACTGTGCGAAATCTGTCAAT 300
                                                                           2001-483195/52.
DB; AAG66523.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:AAH76441
                                                                                                                        'n
                                                                                                                                      BM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   heavy
                                                                                                                      Hinton P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chain;
                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
12..437
                                                                                                                                                                                                                                                                                                                         /*tag= a
/product= "humanised anti-CTLA4 heavy chain"
                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                      Turner K,
Tsurushita
                                                                                                                        Collins N;
                                                                                                                                      ĭ
                                                                                                                                      Gray
                                                                                                                                      GS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                      Morris
```

seq_documentation_block:
ID AAH76443 standard; cl
XX
AC AAH76443;
XX

CDNA; 468

seq_name:

/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:AAH76443

```
alignment_block:
US-09-786-015-2 x AAH76441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Align seg 1/1 to: AAH76441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or condition such as autoimmune disorder, immune response to a graft, allergic response or an immune response to a therapeutic protein. The antibody is also useful for research purposes, e.g., in staining and isolating CTLA4-bearing cells. The antibody is also useful for T-cell typing, for isolating specific II-2 receptor-bearing cells or fragments of the receptor, for vaccine preparation, and for determining the effectiveness of an agent to down-regulate CTLA4 activity. The present sequence encodes the heavy chain of humanised anti-CTLA4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          an antibody that specifically recognises a molecule expressed only on activated T cells, and a toxic group. The T cell molecule is preferrably human cytotoxic T lymphocyte associated antigen 4 (CTLA4). The antibody of the invention is a humanised anti-CTLA4 antibody comprising a sequence of 128 or 142 amino acids fully defined in the
                                                                                                                                                                                                                                                                                                                                                                                                                            169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            419
                                                                                  369
                                                                                                                            101
                                                                                                                                                                                                                                                        269
                                                                                                                                                                                                                                                                                                                                          219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  specification. The antibody-toxic group conjugate is useful for modulating the immune response in a subject suffering from a disorder
                                   115 uLeuLeuThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 460 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 7; Page 118; 123pp; English.
                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                                                                                                                                                                                34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69 CAGGTGCAGCTGCAAGAGTCAGGACCTGGCCTGGTGAAGCCCTCACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                                          erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                        ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
::: :::|||::: ||| |||||:::||||||||||
ATATGGGCTGGTGGTACCACAAATTATAATTCGGCTCTCATGTCCAGACT
                                                                                                        GlyAspSerValPro.....TyrGlyLeuAspTyrTrpSerProGlyLe 115
                                                                                                                                                                                                                                                   GACAATCAGCAAAGACACATCCAAGAACCAAGTTTCCTTAAAAACTCAGCA 318
                                                                                                                                                                                                                                                                                                                                                                                                                            TATATTGGGTTCGCCAGCCTCCAGGAAAGGGTCTGGAGTGGCTGGGAGTA 218
CCTAGTCACAGTCTCCTCA
                                                                                  CACGCTATGATGAAGAGAGGCTATGCTATGGACTACTGGGGACAAGGAAC
                                                                                                                                                                                                                                                                              uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                 GTGTGACTGCAGCGGACACAGCCGTCTACTACTGTGCCCGAGGCCCCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    relates to an antibody-toxic group conjugate comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        417.00
3.971
85.366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107 A;
437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ç
O:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  G; 113 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66.667
                                                                                                                                                                    368
                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                          268
                                                                                                                                                                                                                                                                                                                                                                                  67
```

22-OCT-2001

(first entry)

```
alignment_scores:
    Quality:
    Ratio:
Percent Similarity:
                                                                                                                                              alignment_block:
US-09-786-015-2 x AAH76443
 Align seg 1/1
                                                                                                                                                                                preferably human cytotoxic T lymphocyte associated antigen 4 (CTLA4). The antibody of the invention is a humanised anti-CTLA4 antibody comprising a sequence of 128 or 142 amino acids fully defined in the specification. The antibody-toxic group conjugate is useful for modulating the immune response in a subject suffering from a disorder or condition such as autoimmune disorder, immune response to a graft, allergic response or an immune response to a therapeutic protein. The antibody is also useful for research purposes, e.g., in staining and isolating CTLA4-bearing cells. The antibody is also useful for receptor for vaccine preparation, and for determining the effectiveness of an agent to down-regulate CTLA4 activity. The present sequence encodes the heavy chain of humanised anti-CTLA4
                                                                                                                                                                                                                                                                                                                                                         The invention relates to an antibody-toxic group conjugate comprising an antibody that specifically recognises a molecule expressed only on activated T cells, and a toxic group. The T cell molecule is
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel antibody-toxic group conjugate comprising an antibody that recognizes a molecule expressed only on activated T cells, useful for modulating immune response for treating autoimmune disorder, allergic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 O'Hara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carreno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               allergy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; CTLA4; cytotoxic T lymphocyte associated antigen 4; anti-CTLA4; immunosuppressive; immunomodulator; antiallergic; vaccine; antibody; T cell; humanised antibody; autoimmune disorder; graft rejection;
                                                                                                                                            Sequence 468
                                                                                                                                                                                                                                                                                                                                                                                                                Example 7; Fig 10; 123pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200154732-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Humanised anti-CTLA4 heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                                            response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GEMY )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-483195/52.
bB; AAG66523.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENETICS INST INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hinton P,
ţo:
                                                                                                                                             BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0178473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001WO-US02653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chain;
 AAH76443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
16..441
                                                               417.00
3.971
85.366
                                                                                                                                             111
                                                                                                                                             ۸,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Turner K,
Tsurushita
                                                                                                                                             124
 from:
                                                           Length:
Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "humanised
                                                                                                                                            Ç;
 \vdash
                                                                                                                                             116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Collins N;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDNA
 ţ
O:
                                                                                                                                            G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anti-CTLA4 heavy chain"
                                                                                                                                            117 T;
 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ž
                                                               : 123
: 1
: 66.667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gray
                                                                                                                                            0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Morris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ä
```

GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh

```
seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: /SIDS1/gcgdata/geneseq/geneseqn*emb1/NA1997.DAT:AAT90980
                                                                                       (BOEF )
(PROT-)
                                                                                                                                                                                                                            mat_peptide
Antibodies to platelet derived growth factor beta receptor - PDGF BB-induced proliferation of cells expressing the receptor
                                 WPI; 1997-503114/46.
P-PSDB; AAW30273.
                                                                   Chang
                                                                                                                                                                      09-OCT-1997
                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                        07-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                             AAT90980;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   123
                                                                                                                         22-MAR-1996;
                                                                                                                                              19-MAR-1997;
                                                                                                                                                                                                                                                                                               Homo
                                                                                                                                                                                                                                                                                                                                          HuM4TS.22; antibody;
                                                                                                                                                                                                                                                                                                                                                                Nucleotide sequence of the heavy chain of HuM4TS.22
                                                                                                                                                                                                                                                                                                                                                                                                                                 AAT90980 standard;
                                                                                                                                                                                            WO9737029-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17
                                                                                                                                                                                                                                                                                                                                inhibition;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTAGTCACAGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               uLeuLeuThrValSerSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACGCTATGATGAAGAGAGGCTATGCTATGGACTACTGGGGACAAGGAAC 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGTGACTGCAGCGGACACAGCCGTCTACTACTGTGCCCGAGGCCCCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACAATCAGCAAAGACACATCCAAGAACCAAGTTTCCTTAAAACTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATATTGGGTTCGCCAGCCTCCAGGAAAGGGTCTGGAGTGGCTGGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTGTCCTTGACTTGCACTGTCTCTGGGTTTTCATTAACCTCATATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlyAspSerValPro.....TyrGlyLeuAspTyrTrpSerProGlyLe 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATATGGGCTGGTGCTACCACAAATTATAATTCGGCTCTCATGTCCAGACT
                                                                                                                                                                                                                                                                                              sapiens
                                                                  CN,
                                                                                                                                                                                                                                                                                                                     chain;
                                                                                       BOEHRINGER MANNHEIM PROTEIN DESIGN LABS
                                                                  Landolfi
                                                                                                                                                                                                                                                                                                                              antibody; platelet derived growth beta receptor; PDGF-R beta;
intimal hyperplasia; vasculature; restenosis; angioplasty;
                                                                                                                                                                                                                                                                                                                      SS
                                                                                                                                                                                                                                                                                                                                                                                     (first
                                                                                                                         96US-0621751.
                                                                                                                                              97WO-US04198
                                                                                                                                                                                                                           /product=
58..411
                                                                                                                                                                                                              /*tag=
                                                                                                                                                                                                                                                /*tag=
                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                   NE,
                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                   σ
                                                                                                                                                                                                                                                                                                                                                                                                                                  411 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                   Martin
                                                                                                                                                                                                                                       "Heavy chain
                                                                                                    GMBH
                                                                   G
                                                                                                                                                                                                                                        of M4TS.22"
 receptor, used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50
```

```
Seq.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-786-015-2
                                                                                                                                                                                                                                       seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: AAT90980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                                                             _documentation_block:
    AAQ11847 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This is the nucleotide sequence for the heavy chain of HuM4TS.22, a novel antibody which specifically binds to the platelet derived growth beta receptor (PDGF-R beta), but not within the fifth extracellular Ig-like domain, where the antibody inhibits PDGF BB-induced proliferation of a cell expressing the PDGF beta receptor. The antibody can be used in a method of inhibiting intimal hyperplasia in the vasculature of a mammal. The antibodies can be used for the treatment of disorders related to PDGF activity such as disorders involving proliferation of smooth muscle cells, and including restraces of following against a process of the control of the control of the cells of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 411 BP; 85 A; 115 C;
                  Placental alkaline phosphatase;
                                                     Human anti-placental alkaline phosphatase VH gene
                                                                                                 31-JUL-1991
                                                                                                                                                                                                                                                                                                                   117
                                                                                                                                                                                                                                                                                                                                                                                                                                         308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             restenosis following angioplasty.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       particularly for inhibiting
                                                                                                                                        AAQ11847;
                                                                                                                                                                                                                                                                                399
                                                                                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                     TATGGACTGGTGGAGGCACAAGTTATAATTCTGCTCTCAAATCCCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                                              CACCGTCTCCTCA 411
                                                                                                                                                                                                                                                                                                                   uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                 GACCATATCAAAAGACACTTCCAAGAACCAGGTTTCCCTGAAGCTGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              uSerValThrArgAspThrSerLysSerG1nPheSerLeuSerLeuSerS 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAAACTGGGTTCGGCAGCCACCAGGGAAGGGACTGGAGTGGCTTGGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGTCCCTCACCTGCACTGTCTCTGGTTTCTCCTTAACCAACTATGCTA 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGTGCAGCTGCAGGAGTCGGGGCCCAGGACTGGTGAAGCCTTCGGAGAC 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                          ... GGGACGAGGGGATATTTCTTTGACTACTGGGGCCAGGGAACCCTGGT
                                                                                                                                                                                                                                     /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1991.DAT:AAQ11847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5;
                                                                                                                                                                             standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fig 2C; 87pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               x AAT90980
                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     409.50
3.863
87.603
                                                                                               entry
                                                                                                                                                                               363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intimal
                                                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        112 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        щ
                antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ţo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hyperplasia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        411
                  cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                  heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              207
                                                                                                                                                                                                                                                                                                                                                                                                117
                                                                                                                                                                                                                                                                                                                                                                                                                                       351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-786-015-2 x AAQ11847
                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores:
                                                                                                                                                                                                                                                                                                                                                  Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                       Align seg 1/1 to: AAQ11847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The murine anti-PLAP VH gene (AAQ11845) contains 3 CDRs which are used to reshape the human anti-PLAP VH gene. The murine anti-PLAP Vk gene (AAQ11846) CDRs were used to reshape the human anti-PLAP gene Vk (AAQ11848). The specific binder for human PLAP contains at least one of the former 3 CDRs and/or at least one of the latter CDRs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic specific binder for human placental alkaline phosphatase - for treating and diagnosing cancers e.g. ovarian and colon cancers and pleural effusions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to a human patient. Antibody reagents can be used to identify, e.g. by serum testing or imaging, and/or to treat PLAP producing cancers. Such cancers can occur as, e.g. breast cancer, ovarian cancer and colon cancer or can manifest themselves as liquids such as pleural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Verhoeyen ME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-SEP-1990;
17-NOV-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 10; 28pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1991-157662/22.
P-PSDB; AAR11986.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-NOV-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-MAY-1991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                  101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UNIL ) UNILEVER PLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EP429242-A.
                                   34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                               51
                                                                                                                 17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                             ۲
                                                                                                                                                                                                1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                             CAGGTCCAACTGCAGGAGAGCGGTCCAGGTCTTGTGAGACCTAGCCAGAC
                  TAAGCTGGGTGAGACAGCCACCTGGACGAGGTCTTGAGTGGATTGGCGTA 150
                                                                                            CCTGAGCCTGACCTGCACCGTGTCTGGCTTCACCTTCACCAGTTATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90GB-0019552
89GB-0026045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90EP-0312407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label= C
148..195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers 91..105
                                                                                                                                                                                                                                                                                                                                                      391.00
3.833
84.298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     292..330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag= c
/label= CDR3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= b
/label= CDR2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
CDR1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                         from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ç;
                                                                                                                                                                                                                                                                                                                                                      Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            G;
                                                                                                                                                                                                                                                         to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              74 T; 0
                                                                                                                                                                                                                                                         363
                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              other;
                                                                                                                                                                                                                                                                                                                                                                             121
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       breast
                                                                                                                                                                         50
```

```
seq_documentation_block:
ID AAT86310 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name:
             in many tumours types including neuroblastoma, osteosarcomas and other soft tissue sarcomas, medulloblastomas, high grade astrocytomas, melanomas and small cell lung cancer. The peptide can be detectably labelled, preferably with 99m-Tc, for tissue imaging of cells expressing GD2. It can also be used to target delivery of a therapeutic or pre-therapeutic agent, such as a toxin, streptavidin or a pro-drug converting enzyme, to cells expressing GD2. The peptide may further comprise CD8 to facilitate the formation of GD2-targeted lymphocytes. T cells containing the peptide can also be used to target GD2-producing
                                                                                                                                                                                                                                                         The present sequence encodes a recombinant single chain peptide, 3G6-ScFv. The peptide is an antibody construct comprising the varegions of the heavy and light chains of an antibody against distaloganglioside (GD2) as a single chain Fv fragment (ScFv). G
                                                                                                                                                                                                                                                                                                                                                                                                                                                Recombinant single chain anti-disialoganglioside useful to detect tumour cells expressing GD2 and therapeutic agents, e.g. toxins, to such cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cheung NV,
                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 11-12; 31pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1997-479996/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-MAR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9734634-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               scFv; tumour; neuroblastoma; osteosarcoma; soft tissue sarcoma
tissue imaging; target delivery; toxin; streptavidin;
pro-drug converting enzyme; GD2-targeted lymphocyte; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Single chain anti-disialoganglioside GD2 antibody 3G6-scFv.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAT86310;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
tumour cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (SLOK ) SLOAN KETTERING INST CANCER RES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Antibody construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACAGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTAGCAGCTACGTGGGGCTATGGAATACTGGGGTCAAGGCAGCCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGTGACAGCCGCGACACCGCGGTCTATTATTGTGCAAGACCCCACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACAATGCTGGTAGACACCAGCAAGAACCAGTTCAGCCTGAGACTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATATGGGAAGACGGGAGCACAAATTATCATTCAGCTCTCATATCCAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1997.DAT:AAT86310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Guo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96US-0013703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97WO-US04427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Larson SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  disialoganglioside;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВΡ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rivlin K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GD2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sadelain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single chain Fv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GD2 antibody to target
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                              the variable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fragment;
                                                                                                                                                                                                                                                               GD2 occurs
```

```
alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                   seq_documentation_block:
                                                                                                                                                                                                                                                                                                                          seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-786-015-2 x AAT86310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                     scFv; tumour; neuroblastoma; osteosarcoma; soft tissue sarcoma;
tissue imaging; target delivery; toxin; streptavidin;
pro-drug converting enzyme; GD2-targeted lymphocyte; ss.
                                                                                                                                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                                                                                                                                                                                  809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                              misc_feature
                                                                                              misc_feature
                                                                                                                                Synthetic.
                                                                                                                                                                                          Antibody construct; disialoganglioside; GD2; single chain Fv fragment;
                                                                                                                                                                                                                  Single chain anti-disialoganglioside GD2 antibody 3G6-scfv-streptavidin
                                                                                                                                                                                                                                          06-APR-1998
                                                                                                                                                                                                                                                                                         AAT86312
                                                                                                                                                                                                                                                                                                                                                     702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 714 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                     CACCGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                          uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                  GGGGGTAACTACGGCTATGCTTTGGACTACTGGGGTCAAGGAACCTCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                          GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                              erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCATCAGCAAGGACAACTCCAAGAGCCAAGTTTTCTTAAAAATGAACA 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATGGGCTGGTAGGAAGCACAAATTATAATTCGGCTCTTATGTCCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACACTGGGTTCGCCAGCCTCCAGGAAAGGGTCTGGAGTGGCTGGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCTGCAAACTGATGACACAGCCATGTACTACTGTGCCAGT.....CGG
                                                                                                                                                                                                                                                                                                                          /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1997.DAT:AAT86312
                                                                                                                                                                                                                                                                                         standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ratio:
                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAT86310
           /note= "linker seqeunce"
739..0
                                              715..738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   391.00
3.796
85.124
/*tag=
                                                                      /note=
                                                                                                        Location/Qualifiers
                                   /*tag=
                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           174
                                                                                                                                                                                                                                                                                                                                                     714
                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P
                                                         "encodes single chain antibody 3G6"
O
                                                                                                                                                                                                                                                                                         1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           205 G; 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
. Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ŧ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61.983
                                                                      ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                     fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          407
                                                                      of.
```

```
alignment_block:
US-09-786-015-2 x AAT86312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence encodes a recombinant single chain peptide, 366-ScFv-streptavidin. The peptide is an antibody construct comprising the variable regions of the heavy and light chains of an antibody against disialoganglioside (GD2) as a single chain Fv fragment (scFv). GD2 occurs in many tumours types including neuroblastoma, osteosarcomas and other soft tissue sarcomas, medulloblastomas. The peptide can be detectably labelled, preferably with 99m-Tc, for tissue imaging of cells expressing GD2. It can also be used to target delivery of a therapeutic or pre-therapeutic agent, such as a toxin, streptavidin (e.g. present sequence) or a pro-drug converting enzyme, to cells expressing GD2. The peptide may further comprise CD8 to facilitate the formation of
                                                                                     558
                                                                                                                                                                       508
                                                                                                                                                                                                                                                            458
                                                                                                                                                                                                                                                                                                                                                 408
                                                                                                                                                                                                                                                                                                                                                                                                                                      358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Recombinant single chain anti-disialoganglioside useful to detect tumour cells expressing GD2 and therapeutic agents, e.g. toxins, to such cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cheung NV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20-MAR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9734634-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1173 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (SLOK ) SLOAN KETTERING INST CANCER RES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GD2-targeted lymphocytes. T cells containing the peptide can also be used
                                        84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                             67
                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                      17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV :||||||:::||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   target GD2-producing tumour
                                                                                                                                                                     ATATGGGCTGGTAGAAGCACAAATTATAATTCGGCTCTTATGTCCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
  GTCTGCAAACTGATGACACAGCCATGTACTACTGTGCCAGT
                                                                                GAGCATCAGCAAGGACAACTCCAAGAGCCAAGTTTTCTTAAAAATGAACA
                                                                                                                           uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                             ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                                                                                                                                                                                                                               CCTGTCCATCACTTGCACTGTCTCTGGGTTTTCATTAACCAATTATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGTGCAGGTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAG
                                                                                                                                                                                                                                                        TACACTGGGTTCGCCAGCCTCCAGGAAAGGGTCTGGAGTGGCTGGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Guo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAT86312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96US-0013703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97WO-US04427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ή,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                391.00
3.796
85.124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             270 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Larson SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "encodes streptavidin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             334 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rivlin K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             340 G; 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GD2 and cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sadelain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61.983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GD2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              target
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antibody
                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                     50
                                                                                                                                                                                                                                                                                                                                                                                       34
                                                                                                                                                                                                                                                                                                                                               457
                                                                                                                                                                                                                                                                                                                                                                                                                                  407
                                                                                                                           84
                                                                                                                                                                       557
                                                                                                                                                                                                                                                        507
                                                                                  607
651
```

Sequence 420 BP;

95 A;

111 C;

108 <u>ن</u> 106

₽,,

0

with antigen

```
seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         documentation_block:
AAT77852 standard;
                                     Novel recombinant conjugate antibody molecules comprise a monoclonal antibody specific for a surface structure of antigen presenting cells (APC), genetically modified to contain at least one antigen exclusively at one or more preselected sites. The conjugate is capable of delivering the antigen to APC and eliciting an immune response to the antigen. The new conjugates are useful as vaccines and are able to elicit an enhanced immune response without the use of an adjuvant. In a specific example, a conjugate was constructed using the murine anti-human class II monoclonal antibody secreted by hybridoma 44HI04. The peptide CLTB36 was chosen as antigen; it consists of a tandemly linked T and B cell epitope derived from HIV WN strain. The present sequence encodes the heavy chain variable region which was PCR amplified from 44HI04 and used in the preparation of a
                                                                                                                                                                                                                                                                                                 Recombinant conjugate antibody mol., modified for delivering an antigen - elicits enhanced immune response without the use of adjuvant to generate antibodies which are useful in vaccines or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antigen delivery; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; AAW22538
                                                                                                                                                                                                                                                                                                                                                                           WPI; 1997-077271/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                     (CONN-) CONNAUGHT LAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19-DEC-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO9640941-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Antibody; heavy chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Murine anti-human class II monoclonal antibody 44H104 HL chain cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAT77852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  702
                                                                                                                                                                                                                                                       Example 1; Fig 1B;
                                                                                                                                                                                                                                                                                      immuno:diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACCGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGGTAACTACGGCTATGCTTTGGACTACTGGGGTCAAGGAACCTCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1997.DAT:AAT77852
                                                                                                                                                                                                                                                                                                                                                                                                          ZZ
                                                                                                                                                                                                                                                                                                                                                                                                         Barber BH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95US-0483576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96WO-CA00400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "Encodes 44H104 heavy chain variable region,
including secretion signal; termination
codon not given"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        enhance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..420
                                                                                                                                                                                                                                                     64pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                        LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        variable region; hybridoma cell line
ce; stimulate; vaccine; immunodiagnosi
                                                                                                                                                                                                                                                                                                                                                                                                         Caterini JE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                       English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                         Cates
                                                                                                                                                                                                                                                                                                                                                                                                          ,
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunodiagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                          Klein MH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         117
```

```
seq_documentation_block:
ID         AAA38902 standard; DNA;
XX
PAX PRR PRR X TX X PRR X X PRR X X PRR X X PRR X Y PR X Y PRR X Y PR X Y P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-786-015-2 x AAT77852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_name: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT:AAA38902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1 to: AAT77852
                                                    21-MAR-1986;
08-MAY-1988;
08-FEB-1984;
11-JAN-1985;
11-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antigen binding site; immunoglobulin; cancer antigen; immunolc antibody; tumour; human; mucin; cancer; cytostatic; hybridoma; specific binding assay; affinity purification; drug targeting; toxin targeting; imaging; genetic; therapeutic; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        111
                                                                                                                                                                                                                                            07-JUN-1995;
                                                                                                                                                                                                                                                                                                    25-APR-2000
                                                                                                                                                                                                                                                                                                                                                           US6054561-A.
                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAA38902;
(CHIR ) CHIRON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCATCAGCAAAGACAACTTCAAGAGCCAAGTTTTCTTAAAAATGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATATGGGCTGGTAGAGCATAAATTATAATTCGGCTCTCATGTCCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGTGCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCCCCCTCACAGAG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACCGCCTCCTCA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGACTACGTCCACTATGCTATGGACTACTGGGGTCAAGGAACCTCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACACTGGGTTCGCCAGCCTCCAGGAAAGGGTCTGGAGTGGCTGGGAGTA 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hybridoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                    86US-0842476.
88US-0190778.
84US-0577976.
85US-0690750.
94US-0288981.
CORP
                                                                                                                                                                                                                                         95US-0483749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VH domain encoding DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          390.50
3.828
84.298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>:</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Identity: 61.983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NO:13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunological;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            260
```

```
seq_documentation_block:
ID AAA08033 standard; D:
    XX
AC AAA08033;
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
US-09-786-015-2 x AAA38902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention describes a monoclonal antibody (MAb) (I) that binds to a human breast cancer antigen that is also bound by MAb 454Cl1 and 520C9 (produced hybridoma ArCC HB8484 and HB8696, respectively). All described is a hybridoma that produces (I). (I) is useful in specific binding assays, affinity purification, drug or toxin targeting, imaging, and genetic or immunological therapeutics for various cancers. The present sequence encodes a VH domain derived from a 260F9 hybridoma, which is used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ring
                                                                                                                                                    117
                                                                                                                                                                                   295
                                                                                                                                                                                                               101
                                                                                                                                                                                                                                             251
                                                                                                                                                                                                                                                                                                        201
                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Monoclonal antibody capable of binding useful for affinity purification, drug
                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 357 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 7; 57pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-338508/29.
P-PSDB; AAY90818.
                                                                                                                                                                                                                                                                          84
                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                              51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe ::: ::::::: ||| ||||||:::||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uThrValSerSer 121
:|||||||||||
CACCGTCTCCTCA 357
                                                                                                                                                                                                                                        alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGTCCATCACTTGCTCTGTCTCTGGGTTTTCATTAACCAACTATGGTG
                                                                                                                                                                                                             GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                                                                                     GAGCATCAGCAGAGACAACTCCAAGAGCCAAGTTTTCTTAGAAATGAACG
                                                                                                                                                                                                                                                                                                                    uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                 GGGGATTACGACTCTTATACTTTGGACTACTGGGGTCAAGGAACCTCAGT
                                                                                                                                                                                                                                                                                                                                                                 ATATGGGCTGCTGGAAGCACAAATTATAATTCGGCTCTCATGTCCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                          TACACTGGGTTCGCCAGTCTCCAGGAAAGGGTCTAGAGTGGCTGGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB;
                                                                                        /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT:AAA08033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA38902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              389.00
3.814
84.298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89 C;
                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ი</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps:
: Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      86 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human breast cancer antigen toxin targeting, imaging, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61.983
                                                                                                                                                                                                                                                                                                      250
                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                                                                                                                                                           150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               imaging,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Also
```

DNA;

19-JUN-2000

(first entry)

```
alignment_block:
US-09-786-015-2 x AAA08033
                                                                                                                                                                                                                                                                                                                                                                                                                                           CC The present invention describes an immunoassay (I) for assessing CC processing and/or product quality characteristics of grain from a wheat CC cultivar, by using a monoclonal antibody or fragment specific for one CC member of high molecular weight glutenin subunit pair (HMW-GS). The CC method comprises exposing a wheat grain sample to the antibody, under binding conditions, and detecting the binding. The antibody has been CC raised with a preparation comprising the HMW-GS member in a substantially denatured form. The immunoassay is useful for assessing CC processing and/or product quality characteristics of grain from a wheat CC cultivar and for discriminating HMW-GS in wheat grains associated with CC superior bread and pasta-making qualities, for identifying preferred CC wheat cultivars in plant breeding. Simple assessment of HMW-GS CC composition and wheat grain quality can be done from small samples of CC grain, meal or flour, e.g. 500mg-10g, making it more economical than CC prior art large scale analysis methods which are very labour intensive. CC The present sequence encodes a specifically claimed antibody fragment CC for use in the method of the invention.
                                                                                                                                                                                                                  Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                         Percent Similarity:
 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Glutenin subunit; wheat; antibody; immunoassay; plant breeding; grain; flour; bread; pasta; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Giersch TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200012557-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 840 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Immunoassay for discriminating high molecular weight glutenin subunits in wheat useful for identifying desired wheat cultivars in plant breeding, involves using monoclonal antibody specific for glutenin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (QUAL-) QUALITY WHEAT CRC LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-AUG-1999;
                                   34
                                                                                                         17
                                                                                                                                            20
                                                                                        CAGGTCCAACTGCAGGAGTCAGGACCTGGCCTAGCGCAGCCCTCACAGAG
                                                                                                                                                             GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
TACACTGGGTTCGCCAGTCTCCAGGAAAGGGTCTGGAGTGGCTGGGAGTG 169
                alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                      CCTGTCCATCACCTGCACAGTCTCTGGTTTCTCATTAACTAGCTATGGTG
                                                                                                                                                                                                                                                                                                                                         Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fragment scFv TG8-D4 polynucleotide sequence SEQ ID
                                                                                                                                                                                                                                                                                                                          Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Page 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Skerritt JH,
                                                                                                                                                                                                                  AAA08033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98AU-0005548.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-AU00690
                                                                                                                                                                                                                                                                                                      389.00
3.777
85.124
                                                                                                                                                                                                                                                                                                                                                                                                               210 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                             226 C;
                                                                                                                                                                                                                  from: 1
                                                                                                                                                                                                                                                                                                        Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               H111 AS;
                                                                                                                                                                                                                                                                                                                                                                                                               227
                                                                                                                                                                                                                 ţo:
                                                                                                                                                                                                                                                                                                                                                                                                             G; 176 T;
                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                      : 121
: 0
: 61.157
                                                                                                                                                                                                                                                                                                                                                                                                               Н
                                                                                                                                                                                                                                                                                                                                                                                                               other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                identification;
                                                                      119
                                                                                                                                            69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NO:1
```

```
seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         170
                                                                                                                                                                                                                                                                                                                             Monoclonal antibody; Ab; ganglioside GM2; chimera; chimeric antibody; expression vector; heav; light; cha hypervariable region; CDR; constant region; hybridoma; Ig; immunoglobulin; KM-796; KM-750; KM-603; cancer; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   370 CACCGTCTCCTCA 382
                            WPI; 1994-126857/16.
P-PSDB; AAR53331.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      270 GTCTGCAAACTGATGACACAGCCACGTACTACTGTGCCAAAGGGATCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACTATAGAGATTACTATGCTATGGACTACTGGGGCCAAGGGACCACGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCATCAGCAAGGACAACTCCAAGAGCCAAGTTTTCTTAAAAATGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1994.DAT:AAQ45429
                                                              Hasegawa M,
                                                                                                                                                                                                                      /mote= b
/note= "sig_peptide"
157..171
/*tag= c
                                                                                HAKKO KOGYO KK
                                                                                                92JP-0238452
                                                                                                                 93AU-0046181
                                                                                                                                                                          /*tag= d
/note= "hypervariable region
358..369
                                                                                                                                                                                                        /note= "hypervariable region
214..261
                                                                                                                                                                                                                                                             /note=
10..66
                                                                                                                                                                                                                                                                                     Location/Qualifiers 10..405
                                                                                                                                                                                                                                                                             /*tag=
                                                                                                                                                                  /note= "hypervariable region
                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA
                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                               Koike
                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                    "excluding stop
                                                                                                                                                                                                                                                                                                                                                                                                                         ţ
                                                                                                                                                                                                                                                                               Ø
                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA; 405
                                                               Z,
                                                               Kuwana
                                                                                                                                                                                                                                                                                                                                                                                                                          ₿P
                                                                                                                                                                                                                                                                     codon"
                                                               ĸ
                                                               Nakamura
                                                                                                                                                                                                                    ۲,
                                                                                                                                                                                                                                                                                                                                                chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
```

antibody specific for a cytocidal effect on

ganglioside GM2 cancers such as

melanoma, used for

Chimeric human Ab expression vectors are constructed by inserting

heavy and light chain variable region-encoding

CDNA

Disclosure; Page 109; 191pp; English

neuroblastoma and

```
seq_documentation_block:
ID         AAX99477 standard;
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: AAQ45429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-786-015-2 x AAQ45429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               light chain constant region-encoding cDNA. The expression vectors are introduced into animal cells and the transformant thus obtained is cultured for the prodn. of a chimeric human Ab reacting with the ganglioside GM2. In contrast to mouse monoclonal Abs, the chimeric human Abs will not cause anti-mouse Ig Ab prodn. In the patient's body but show a prolonged blood half-life, with a reduced frequency of adverse effects, so that it can be expected to be superior to mouse monoclonal Abs in the efficacy in the treatment of human cancer, for instance.

Mouse anti-GM2 monoclonal Ab KM-796 and KM-750 and rat KM-603 heavy and light chain sequences are given in AAQ45426-30.

CDR regions for use in chimeric Abs are indicated in the
                                                                                                                                                       367
                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                117
                                                                                                                                                                                                                                                                            267
                                                                                                                                                                                                                                                                                                                                       217
                                                                                                                                                                                                                                                                                                                                                                                                    167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  isolated from hybridomas producing a mouse or rat monoclonal Ab reacting with the ganglioside GM2 respectively into an expression vector for use in animal cells which contains the human Ab heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 405
                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                      51
                                                                                                                                                                                                                                                                                                                                                                                                                                  34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                  GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn
                                                                                                                                                                                                                                                                           GAGCATCAGCAGGGACACCTCCAAGAGCCAAGTTTTCTTAAAAATGAACA
                                                                                                                                                                                                                                                                                                                                                      ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe :::||||||||:::||||||||
                                                                                                                                                                                                                                                                                                                                                                                                  Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       regions for
tures Table.
                                                                                                                                                                                                                  GTCTGCAAACTGAAGACACAGCCATGTACTTCTGTGCCCCTTCTGAGGGG
                                                                                                                                                                                                                                                                                            uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                       ATATCAAGTGGTAGGAAGCACATATTATAATTCAGCTCTCAAATCACGACT
                                                          /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT: AAX99477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 388.50
3.809
84.298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95
                 CDNA to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۶
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ç
                 mRNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          103 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ço:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Identity:
                                                                                                                                                     TGGGGCCAAGGAGTCATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62.810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                           316
                                                                                                                                                                                                                  366
                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                  216
                                                                                                                                                                                                                                                                                                                                                                                                                                50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      anc
```

```
alignment_block:
US-09-786-015-2 x AAX99477
                                                                                                                                                         alignment_scores:
                                                                                                                                                                                        Align seg 1/1 to: AAX99477
                                                                                                                               Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antibody;
chimeric;
                                                                                                                                                                                                                                      The chimeric human antibodies are useful in the treatment of cancer, especially that which is of neural ectodermal origin. In contrast to prior art constructs based on mouse monoclonal antibodies, the chimeric human antibodies do not cause anti-mimmunoglobulin production.
frequency of adverse effects when antibodies.
                                                                                                                                                                                                                                                                                        This antibody chain is derived from Hybridoma cells producing Anti-GM2 Monoclonal Antibody KM-603.
                                                                                                                                                                                                                                                                                                                                                                                                                                         07-JUN-1995;
07-SEP-1993;
                                                                                                                                                                                        Sequence 405
                                                                                                                                                                                                                              The chimeric human antibodies have a prolonged half-life and a reduced
                                                                                                                                                                                                                                                                                                                      Example 1; Column 87-89;
                                                                                                                                                                                                                                                                                                                                         Chimeric human antibody expression vectors
                                                                                                                                                                                                                                                                                                                                                                                          Shitara
                                                                                                                                                                                                                                                                                                                                                                                                   Hanai N,
                                                                                                                                                                                                                                                                                                                                                                                                                      (KYOW ) KYOWA HAKKO KOGYO KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US5939532-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rattus sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAX99477;
                                        67 CAAGTGCAGCTGAAGGAGTCAGGACCTGGTCTGGTGCAGCCCTCACAGAC
                                                        1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                                                                                                                                                                                                             1999-468416/39
DB; AAY28359.
                                                                                                                                       Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                           <u>~</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleotide; genomic; hypervariable light chain; heavy chain; ds.
                                                                                                                                                                                                                                                                                                                                                                                                  Hasegawa M,
                                                                                                                                                                                        BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chain
                                                                                                                                                                                                                                                                                                                                                                                                                                        95US-0483528
93US-0116778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95US-0483528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag=
67..405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product-
10..66
                                                                                                                             388.50
3.809
84.298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers 10..405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag=
                                                                                                                                                                                        95 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KM-603
                                                                                                                                                                                        110
                                                                                                                                                                                                                                                                                                                                                                                                    Koike
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               O
                                                                                                                                                                                                                                                                                                                     188pp; English.
                                                                               from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Rat
                                                                                                                           Length:
Gaps:
Percent Identity:
                                                                                                                                                                                       Ç
                                                                                                                                                                                                                                                                                                                                                                                                   ĭ
                                                                                                                                                                                        103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     anti-GM2 heavy chain'
                                                                                                                                                                                                                                                                                                                                                                                                    Kuwana
                                                                                                                                                                                       <u>ა</u>
                                                                                                                                                                                                                   compared
                                                                              to: 405
                                                                                                                                                                                        97
                                                                                                                                                                                        T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                    ۲,
                                                                                                                                                                                                                     ឧ
                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                    Nakamura
                                                                                                                                                                                                                     mouse monoclonal
                                                                                                                               . 810
                                        116
                                                                                                                                                                                                                                                   anti-mouse
                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                                                                  Rat
```

```
seq_documentation_block:
ID AAQ13110 standard; DNA; 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1991.DAT:AAQ13110
                                                                                                                                                                              EP440146-A.
EP440147-A.
                                                                                                                                                                                                                                                                                                                       CDS
Disclosure; Page 10; 14pp; German
                 Synthetic human antibody library - produced by expression contg. random sequences for hyper-variable regions
                                                                                                          09-FEB-1990;
01-FEB-1990;
                                                                                                                                                                                                                              misc_RNA
                                                                                                                                                                                                                                                           misc_RNA
                                                                                                                                                                                                                                                                                         misc_RNA
                                                                                                                                                                                                                                                                                                                                                   Synthetic
                                                                                                                                                                                                                                                                                                                                                                    Hypervariable region; light chain; heavy chain; CDR; RBS; antigen;
                                                                                                                                                                                                                                                                                                                                                                                        HuVhlys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  390 CACAGTCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101 GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                167
                                                WPI; 1991-231878/32
                                                                    Little
                                                                                                                                        28-JAN-1991;
                                                                                                                                                           07-AUG-1991
                                                                                                                                                                                                                                                                                                                                                                                                           21-OCT-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    117 uThrValSerSer 121
                                                                                      (BEHW ) BEHRINGWERKE AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCATCAGCAGGGACACCTCCAAGAGCCAAGTTTTCTTAAAAATGAACA 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe :::||||||||:::|||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCTGCAAACTGAAGACACAGCCATGTACTTCTGTGCCCCCTTCTGAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ### ATATCAAGTGGTGGAAGCACATATTATAATTCAGCTCTCAAATCACGACT
                                                                  ĭ
                                                                 Breiting
                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                 /label= CDR1
169..216
/*tao=
                                                                                                          90DE-4003880
90DE-4002897
                                                                                                                                        91EP-0101094
                                                                                                                                                                                                                                                                                    /*tag= a
/label= HuVhlys
112..126
                                                                                                                                                                                                            /*tag= d
/label= CDR3
                                                                                                                                                                                                                              311..336
                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                       /*tag= c
/label= CDR2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  402
                                                                  FB,
                                                                    Seehaus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .....TGGGGCCAAGGAGTCATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                    T,
                                                                    Dubel
                                                                  Ś
                                                                  Klewinghaus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              216
                                                                                                                                                                                                                                                                                                                                                                     SS
```

seq_documentation_block:
ID AAT34095 standard; DN
XX
AC AAT34095;
XX
DT 12-OCT-1996 (first e
XX

(first entry)

seq_name: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1996.DAT:AAT34095

DNA;

357

ВP

```
alignment_block:
US-09-786-015-2 x AAQ13110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
    Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic human antibody libraries can be produced by using crandomly synthesised oligonucleotides coding for each of the three typervariable regions in the variable parts of the heavy and light chains (regions CDR1, CDR2 and CDR3). Two batches of oligonucleotides crae used for the synthesis of the variable domains. These are CC ligated and inserted into expression vector pFMT. CC pFMT (EP-440147) comprises a modified pKR233-2 plasmid (Sall-BamHI CC deleted, HindiII replaced by BamHI) with an insert comprising a CC first leader sequence (P1) (AAQ13098) from a bacterial pectate lyase CC gene, a sequence (P4) (AAQ13101) coding for the variable domain of a cC human antibody heavy chain (HuVhys), a ribosome binding site (RBS), CC a second leader sequence (P2) (AAQ13099), and a sequence (VL) (CC (AAQ13111) coding for the variable domain of a human antibody light CC chain (HuVllys). TAG sequences are represented in AAQ13108-09. The libraries may be used to isolate clones producing specific contibodies or antigen-binding antibody fragments by screening with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
357
                      117 uThrValSerSer 121 :|||||||||||
                                                                                       322
                                                                                                           101 GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                              272
                                                                                                                                                                                                                                                                                                                                                            172
                                                                                                                                                                                                                                                                                                                                                                                                                                                 122
                                                                                                                                                                                                                                                                     222 GACAATGCTGGTAGACACCAGCAAGAACCAGTTCAGCCTGAGACTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 407 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   specific antigens.
                                                                                                                                                                                                     84 erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn 100
                                                                                                                                                                                                                                                                                                                                                                                 51 ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe ::: ::: ||| ||| |||||:::|||||||:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34 alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17 rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22 CAGGTCCAACTGCAGGAGAGCGGTCCAGGTCTTGTGAGACCTAGCCAGAC 71
                                                                                                                                                                                                                                                                                                          67 uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTGAGCCTGACCTGCACCGTGTCTGGCTTCACCTTCAGCGGCTATGGTG
CACAGTCTCCTCA 369
                                                                                                                                                                              ATTTGGGGTGATGGAAACACAGACTATAATTCAGCTCTCAAATCCAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAAACTGGGTGAGACAGCCACCTGGACGAGGTCTTGAGTGGATTGGAATG
                                                                                       .....TATAGGCTTGACTACTGGGGTCAGGGCTCCCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAQ13110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     388.50
3.847
83.471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ţo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62.810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                     271
                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                               171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34
```

humanised

2B6

antibody heavy chain variable region

DNA

```
alignment_block:
US-09-786-015-2 x AAT34095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                            Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                          Align seg 1/1 to: AAT34095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-JUN-1995;
23-DEC-1994;
06-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A synthetic DNA sequence (AAT34095) codes for the heavy chain variable region (AAR98492) of NEWM humanised antibody 2B6, comprising complementarity determining regions (see also AAR98480-82) derived from murine monoclonal antibody 2B6 VH (see also AAR98478) and framework regions from human immunoglobulin NEW, but with amino acid substitutions made at framework residues that might influence CDR presentation. A synthetic variable light chain sequence (AAT34096) was also constructed. Humanised 2B6 (see also AAT34093-94) is specific for human interleukin-5 (IL-5) and can be used for the diagnosis and treatment of IL-5-mediated conditions, e.g. asthma,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        interleukin-5; IL-5; eosinop
atopic dermatitis; therapy;
                                                           101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 4; Page 86-87; 120pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                with excess eosinophil prodn., e.g asthma etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      products for the treatment and diagnosis of conditions associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New monoclonal antibody to human interleukin-5 - used to produce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-DEC-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-JUL-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9621000-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       monoclonal antibody; MAb;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Antibody engineering; humanised antibody; chimeric antibody; interleukin-5; IL-5; eosinophil; asthma; allergic rhinitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SMIK)
                                                                                                 34
                                                                                                                                          51
                                                                                                                                                                                  17
                     51
                                                                                   alSerTrpValArgGlnAlaProGlyLysAlaLeuGluTrpLeuGlyGly
                                                                                                                                                                                                                         CAGGTCCAACTGCAGGAGAGCGGTCCAGGTCTTGTGAGACCTAGCCAGAC
                                                                                                                                                                                                                                                GlnValGlnLeuGlnGluSerGlyProSerLeuValLysProSerGlnTh
                                                                                                                                                               rLeuSerLeuThrCysThrValSerGlyPheSerLeuThrLysTyrGlyV
||||||||||||:::||
                   ValSerSerGlyAlaLeuThrAlaTyrAsnThrAlaLeuGlnSerArgLe
                                                                                                                                          CCTGAGCCTGACCTGCACCGTCTCGGGCTTCTCCCCTCACCAGCTATAGTG
                                                         TACACTGGGTGAGACAGCCACCTGGACGAGGTCTAGAGTGGCTTGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1996-333976/33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMITHKLINE SMITHKLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appelbaum ER, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rhinitis and atopic dermatitis.
...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95US-0470110.
94US-0363131.
95US-0467420.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95WO-US17082
                                                                                                                                                                                                                                                                                                                                                                                                            385.00
3.850
82.645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BEECHAM CORP.
BEECHAM PLC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     103 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chaiken I
Theisen
                                                                                                                                                                                                                                                                                                          from:
                                                                                                                                                                                                                                                                                                                                                                                                              Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          diagnosis; heavy chain; VH;
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 n TW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ဂ
                                                                                                                                                                                                                                                                                                                                                                                                       Gaps: 1
Identity: 64.463
                                                                                                                                                                                                                                                                                                          ;
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cook RM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                     121
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gross
                                                         150
                                                                                                 50
                                                                                                                                                                                34
                                                                                                                                                                                                                         50
                                                                                                                                                                                                                                                                 17
                   67
                                                                                                                                        100
```

```
seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _documentation_block:
            The sequences given in AAQ31360-61 and AAQ31365-66 are plasmids enceportions of monoclonal antobodies which were derived from mouse hybridomas. The DNA encoding complementarity determining regions (CDR's) was isolated by polymerase chain reaction. The antibodies produced recognises human interleukin-6 receptor (II-6R). The hybridoma cells were transformed with plasmids containing fragments of the antibody gene which caused the production of the antibody from the antibody gene which caused the production of the antibody from the antibody gene which caused the production of the antibody from the antibody gene which caused the production of the antibody from the antibody gene which caused the production of the antibody from the antibody gene which caused the production of the antibody from the antibody from the antibody gene which caused the production of the antibody from the antibody gene which caused the production of the antibody from the production of the antibody from the production of the antibody from the production of the antibody gene which caused the production of the antibody gene which caused the production of the antibody from the production of the antibody from the production of the antibody from the production of the production of the antibody gene which caused the production of the productio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                           determining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; antibody; interleukin-6; receptor; IL-6R; CDR; F complemantarity determining region; mouse; monoclonal; plasmid; polymerase chain reaction; amplify; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAQ31365 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101
                                                                                                                                                                                                            Disclosure; Page 142-3;
                                                                                                                                                                                                                                                                               Reconstituted human antibody to human has low antigenicity and contains mous
                                                                                                                                                                                                                                                                                                                                                         P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                WPI; 1992-398882/48.
                                                                                                                                                                                                                                                                                                                                                                                                                             Bendig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (CHUS ) CHUGAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-APR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               W09219759-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PUC-RVh-PM1f-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uThrValSerSer 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlyAspSerValProTyrGlyLeuAspTyrTrpSerProGlyLeuLeuLe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        erValThrThrGluAspThrAlaIleTyrTyrCysAlaLysSerValAsn
||||||||::: |||||||:::|||||||||:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGTATACTGAAAGACAACAGCAAGAACCAGGTCAGCCTGAGACTCAGCA 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACCGTCTCGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCCCTTCTTCCTTACTACGGCTTGACTACTGGGGACAAGGTACCACGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGTGACAGCCGCCGACACCGCGGTCTATTACTGTGCTCGG.....GAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATATGGGCTAGTGGAGGCACAGATTATAATTCGGCTCTCATGTCCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        uSerValThrArgAspThrSerLysSerGlnPheSerLeuSerLeuSerS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1992.DAT:AAQ31365
                                                                                                                                                                                                                                                                                                                                                                                                                                  X
X
                                                                                                                                                                                                                                                                                                                                                         AAR29014.
                                                                                                                                                                                                                                                                                                                                                                                                                               Jones ST,
                                                                                                                                                                                                                                                        regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEIYAKU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91JP-0095476
92JP-0032084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92WO-JP00544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag=
69..425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12..68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12..425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                               Saldanha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           σ
                                                                                                                                                                                                         207pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                438 BP
                                                                                                                                                                                                                                                                                                                                                                                                                               , ML
                                                                                                                                                                                                                                                                                    mouse
                                                                                                                                                                                                                                                                                                                                                                                                                               Sato
                                                                                                                                                                                                                                                                               interleukin-6
se V-region com
                                                                                                                                                                                                                                                                                                                                                                                                                             ~
                                                                                                                                                                                                                                                                                                                                                                                                                             Tsuchiya
                                                                                                                                                                                                                                                                                 complementarity
                                                                                                                                                                                                                                                                                                        receptor
                                                                                                                                                                                                                                                                                                                                                                                                                               ĭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hybridoma;
                                                                                                                                                            encoding
```

cells